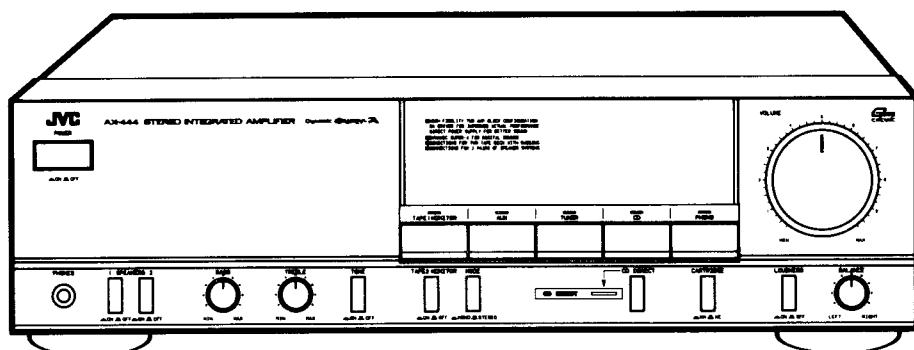


JVC

SERVICE MANUAL

STEREO INTEGRATED AMPLIFIER

MODEL No. **AX-444BK**



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Safety Precautions

1. The design of this product contains special hardware and may circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (▲) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

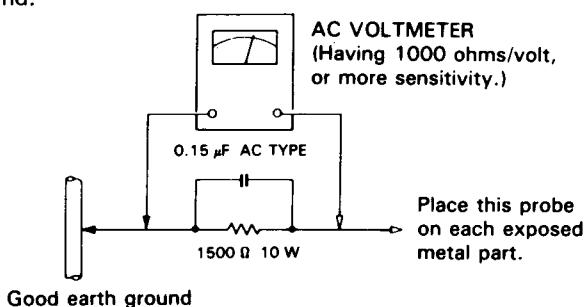
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a $1,500 \Omega$ 10 W resistor paralleled by a $0.15 \mu\text{F}$ AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

Specifications

OVERALL CHARACTERISTICS

Output power
 85 watts per channel into 4 ohms at 1 kHz (DIN). (For Continental Europe, the United Kingdom and Australia.)
 85 watts per channel into 8 ohms at 1 kHz (DIN).
 75 watts per channel, min. RMS, both channels driven, into 8 ohms from 20 Hz to 20 kHz, with no more than 0.007% total harmonic distortion.
 80 watts per channel, min. RMS, both channels driven, into 8 ohms at 1 kHz with no more than 0.003% total harmonic distortion. (measured by JVC Audio Analyzer System)

Total harmonic distortion : 0.007% (20 Hz – 20 kHz, 8 ohms) at 75 watts
 Intermodulation distortion : 0.007% (60 Hz:7 kHz = 4:1, 8 ohms) at 75 watts
 Power band width : 5 Hz – 50 kHz (IHF, 0.05%, 8 ohms both channels driven)
 Frequency response : 5 Hz – 90 kHz +0, -3 dB (8 ohms)
 Damping factor : 50 (1 kHz, 8 ohms)
 Input terminals
 Input sensitivity/ impedance (1 kHz)
 PHONO (MM) : 2.5 mV/47 kohms
 PHONO (MC) : 200 µV/100 ohms
 CD/AUX/ TUNER/TAPE 1, 2
 Signal-to-noise ratio
 PHONO (MM) : 86 dB ('66 IHF)
 PHONO (MC) : 67 dB ('66 IHF)
 CD/AUX/ TUNER/TAPE 1, 2
 PHONO (MM) : 82 dB ('78 IHF)
 (REC OUT)
 PHONO (MC) : 75 dB ('78 IHF)
 (REC OUT)
 CD/AUX/ /TUNER/TAPE 1, 2
 (SP OUT)
 PHONO (MM) : 67 dB (DIN)
 PHONO (MC) : 67 dB (DIN)
 CD/AUX/ TUNER/TAPE 1, 2
 Tone controls : TREBLE: +8 ±1 dB
 -8 ±1 dB
 (at 10 kHz)
 BASS: +8 ±1 dB
 -8 ±1 dB
 (at 100 Hz)
 Loudness controls : +6 dB (at 100 Hz)
 (Volume control at -30 dB position)

EQUALIZER

PHONO overload capacity
 PHONO (MM) : 100 mV (0.02% THD)
 PHONO (MC) : 8 mV (0.04% THD)
 PHONO RIAA deviation
 PHONO (MM) : ±0.3 dB (20 Hz – 20 kHz)
 PHONO (MC) : ±0.5 dB (20 Hz – 20 kHz)

Recording output
 Output level/ impedance
 TAPE REC-1, 2 : 200 mV/Maximum 2 k ohms

GENERAL

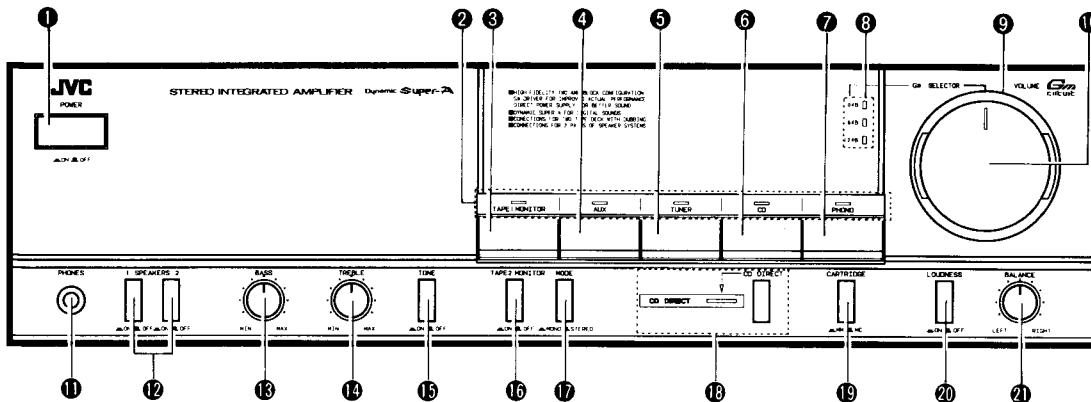
Dimensions : 435 (W) x 125 (H) x 306 (D) mm
 (17-3/16" x 4-15/16" x 12-1/16")
 Weight : 7.1 kg (15.7 lbs.)
 Design and specifications subject to change without notice.

POWER SPECIFICATIONS

Areas	Line voltage & frequency	Power consumption
Continental Europe	AC220V ∼ ,50Hz	220watts
U.K.	AC240V ∼ ,50Hz	530watts
Australia		
Other areas	AC110/120/220/240/V ∼ selectable,50/60Hz	190watts

FRONT PANEL

These instructions are prepared for three models: AX-333BK/AX-444BK/AX-555BK.
Therefore, read the items below concerning each model.



① POWER

- ON (—):** Press this button to turn the power on.
- OFF (■):** Set to this position to turn the power off.

Notes:

- When power is not supplied to this amplifier for 2 – 3 days, the source select button pressed before the power was switched off may be lost when the power is switched on again. If this happens, set the buttons, etc. again.
- An electronic source selector is used in this unit. When the POWER button is first switched on, two or more sources or no source may be selected. Make sure to input the source select data by pressing one of the source selectors.
- If the POWER button is pressed repeatedly to switch on and off too quickly, the same phenomenon as the above will occur.

② SOURCE INDICATOR

The indicator corresponding to the source select button pressed lights.

③ TAPE 1 MONITOR

Press to listen to a tape deck connected to the TAPE 1 terminals.

④ AUX

Press to listen to the source connected to the AUX terminals.

⑤ TUNER

Press to listen to radio broadcasts by a tuner connected to the TUNER terminals.

⑥ CD

Press to listen to the source connected to the CD terminals.

⑦ PHONO

Press to listen to records played by a turntable connected to the PHONO terminals.

⑧ Gm SELECTOR indicators (AX-555BK)

These indicators are illuminated according to the setting of the Gm SELECTOR.

0 dB: Set the Gm SELECTOR so that this indicator lights when listening to a high-volume level.

-6 dB: Set the Gm SELECTOR so that this indicator lights when listening to a middle-volume level.

-12 dB: Set the Gm SELECTOR so that this indicator lights when listening to a low-volume level.

⑨ Gm SELECTOR (AX-555BK)

Setting the Gm selector to -6 dB divides the volume at 0 dB by 4 while setting it to -12 dB divides it by 16. As the Gm selector is turned from 0 dB to -6 dB and -12 dB, residual noise becomes progressively less. Use the Gm selector together with the VOLUME control.

⑩ VOLUME

Controls the volume of the speakers and headphones.

⑪ PHONES (Headphones jack)

Plug stereo headphones into this jack for private listening.

If you want to listen to sound from the headphones only, press the SPEAKERS buttons to "OFF".

⑫ SPEAKERS

Press to switch the speakers connected to the SPEAKERS 1 or 2 terminals on (—) and off (■).

Note: (AX-333BK, AX-444BK)

- When speakers are connected to only one pair of SPEAKERS terminals, press only the SPEAKERS button of the system connected; if both buttons are pressed, sound will not be heard from either speaker system. When two pairs of speakers are connected and either or both SPEAKERS buttons are pressed, sound will be heard from either or both speaker system(s).

⑬ BASS

Turn clockwise to boost bass response and counterclockwise to decrease it.

⑭ TREBLE

Turn clockwise to boost treble response and counterclockwise to decrease it.

⑮ TONE (AX-444BK, AX-555BK)

ON (—): Press to adjust the tone with the BASS and TREBLE controls.

DEFEAT (■): Press to this position to obtain a standard (flat) frequency response.

⑯ TAPE 2 MONITOR

ON (—): Set to this position to listen to the tape deck connected to the TAPE 2 terminals of this unit. If your tape deck is of the 3-head type, you can monitor the recorded sound while recording by setting this button to ON.

OFF (■): Keep this button set to this position, except when you want to listen to the tape deck connected to the TAPE 2 terminals of this unit.

⑰ MODE (AX-444BK, AX-555BK)

MONO (—): Set to this position to have both speakers produce the sound of both the left- and right-channel signals mixed.

STEREO (■): Normally set to this position.

⑱ CD DIRECT

Press this button to enjoy listening to the CD with good sound quality. The indicator lights and the signal fed from the CD terminals is directly connected to the volume, bypassing the circuits on the way, thus allowing you to enjoy listening to an improved sound quality.

Note:

- While the CD DIRECT button is pressed, the reproduced sound does not change even if the SOURCE SELECT button (including TAPE 2 MONITOR), MODE button and BALANCE volume are operated, press the CD DIRECT button again to turn the indicator off when using these.

⑲ CARTRIDGE (AX-444BK, AX-555BK)

MC (—): Press in when using an MC cartridge having an output of less than 0.5 mV.

MM (■): Press again when using an MM or MC cartridge having an output of more than 0.5 mV.

⑳ LOUDNESS

ON (—): To compensate for the ear's lower sensitivity at low listening levels.

OFF (■): To bypass the LOUDNESS circuit.

㉑ BALANCE

Balances the volume between the left and right speakers. Usually set it to the center click position.

OPERATION

Before operation, always be sure to set VOLUME at minimum.

When the volume is increased after selecting a source position with no equipment connected to the input terminal, other connected devices (such as speakers) may be adversely affected by external noise and inductive hum.

Listening to broadcasts

1. Connect a tuner to the TUNER terminals on the rear panel.
2. Press the POWER button on.
3. Press the TUNER button and make sure that the TAPE 1 MONITOR and TAPE 2 MONITOR buttons are set to off.
4. Select the speaker system with the SPEAKERS switches.
5. Operate the tuner according to its instruction manual.
6. Adjust the VOLUME, LOUDNESS, BALANCE and BASS/TREBLE controls.

Listening to records

1. Connect a turntable to the PHONO terminals on the rear panel.
2. Press the POWER button on.
3. Set the CARTRIDGE button of this unit according to the cartridge in use. (AX-444BK, AX-555BK)
4. Press the PHONO button and make sure that the TAPE 1 MONITOR and TAPE 2 MONITOR buttons are set to off.
5. Select the speaker system with the SPEAKERS switches.
6. Operate the turntable according to its instruction manual.
7. Adjust the VOLUME, LOUDNESS, BALANCE and BASS/TREBLE controls.

Listening to tapes

1. Connect a tape deck to the PLAY terminals of TAPE 1 or TAPE 2.
2. Press the POWER button on.
3. Press the TAPE 1 MONITOR button to play back the TAPE 1 deck. For playback of the TAPE 2 deck, press the TAPE 2 MONITOR button to ON (—).
4. Select the speaker system with the SPEAKERS switches.
5. Operate the tape deck for playback according to its instruction manual.
6. Adjust the playback sound controls as required.

Note:

- Do not place the tape deck directly on the amplifier, because it may cause the amplifier to malfunction.

Using stereo headphones

Stereo headphones can be plugged into the front panel jack. Plugging headphones into the PHONES jack does not switch off the speaker sound.

Recording tapes

— Recording from records —

1. Connect a tape deck to the REC terminals of the TAPE 1 or TAPE 2 terminals.
2. Press the POWER button on.
3. Select a speaker system if you wish to hear the sound while recording.
4. Press the PHONO button.
5. Operate the turntable.
6. Operate the tape deck for recording.

— Recording from other sources (TUNER, CD, AUX) —

Press the TUNER, CD or AUX button to record radio broadcasts, or the source connected to the CD, AUX terminals.

All other operations are identical to when recording from disc source.

Note:

- To record from CD, turn the SOURCE SELECT button to "CD". It is possible to monitor the high quality sound by pressing the CD DIRECT button. When monitoring other sources while recording, press the CD DIRECT button again to turn the indicator off.

— Recording from other sources (PHONO, TUNER, AUX) while listening to the CD —

1. Select the source that you wish to record to from among the PHONO, TUNER and AUX button.
2. Operate the tape deck for recording.
3. Press the CD DIRECT button.

Tape dubbing

Dubbing from the TAPE 1 to TAPE 2 is carried out as follows:

1. Press the TAPE 1 MONITOR button.
2. Play back the TAPE 1 deck.
3. Operate the TAPE 2 deck for recording.

You can perform tape dubbing while listening to the CD by pressing the CD DIRECT button in addition to the above operations.

Notes:

- The sound you hear from the speakers or headphones is the source sound, not that being recorded on the tape.
- Dubbing from TAPE 2 to TAPE 1 is not possible.
- The VOLUME control of this amplifier has no effect on the recording level. Adjust the recording level with the controls on the tape deck.

How to operate the monitor while recording on the tape deck

1. Connect a 3-head tape deck to the TAPE 1 or TAPE 2 terminals.
2. Make sure to connect the signal cords to the PLAY and REC terminals.
3. Select the source from which you want to record by depressing the source select button on this unit.
4. Operate the tape deck for recording as described in its operating manual.
5. By playing the source component, you can record on the tape deck.
6. While recording on the tape deck, the recorded sound can be heard by depressing the TAPE 1 MONITOR or TAPE 2 MONITOR button on this unit.

Use of S.E.A. Graphic Equalizer

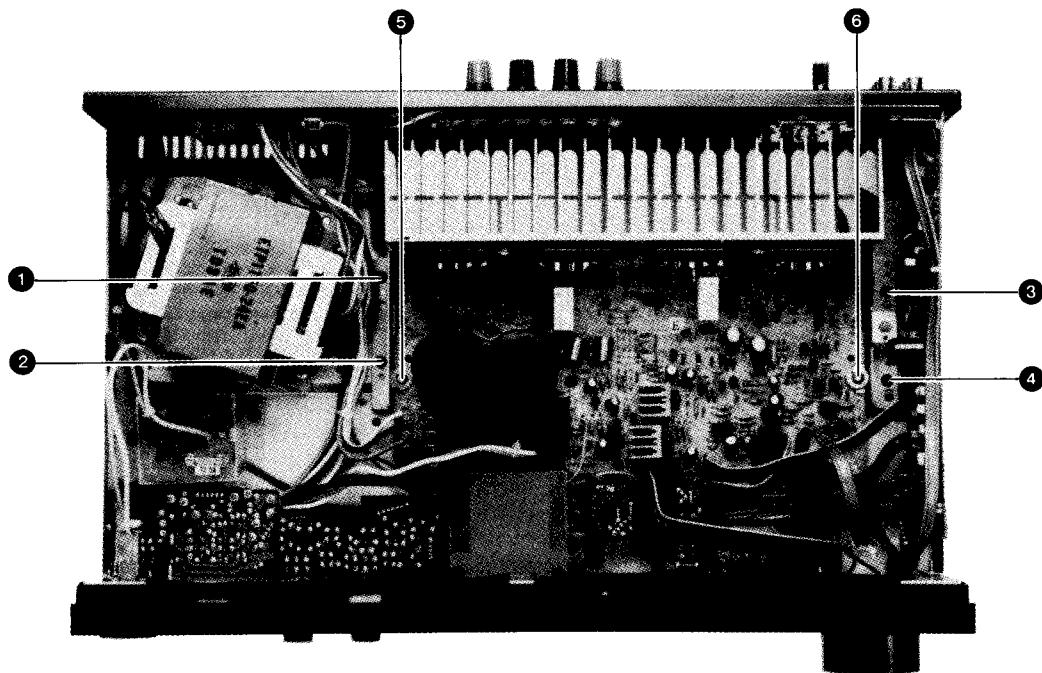
The S.E.A. Graphic Equalizer is JVC's exclusive tone control system. By allowing you to independently boost or lower the response of finely divided sections of the frequency spectrum: the S.E.A. gives you much greater control over the sound quality of your stereo system. With an optionally available S.E.A. Graphic Equalizer, you can tailor the sound to your own taste for different types of music or to compensate for the particular acoustic characteristics of your audio components and listening room.

The TAPE 2 terminals of the AX-333BK, AX-444BK or AX-555BK can be used for connecting the S.E.A. Graphic Equalizer.

Note:

- Even if the S.E.A. Graphic Equalizer is operated while the CD DIRECT button is pressed, reproduced sound is neither adjusted nor compensated. When using the S.E.A. Graphic Equalizer, press the CD DIRECT button once again to turn the indicator off.

Removal Procedures



■ Removing the Top Cover

1. Remove six screws.
2. Remove the top cover by lifting up its rear section and pulling it backward while holding it on incline.

■ Removing the Front Panel

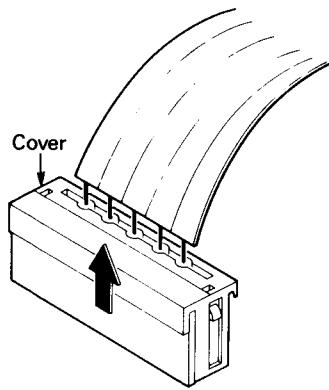
1. Remove the top cover.
2. Pull out the volume knob and remove the nut.
3. Remove three plastic rivets on the upper part of the front panel and three screws from the lower part.

■ Removing the Power Transistors

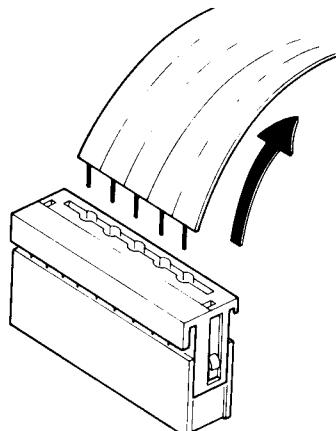
1. Remove the top cover.
2. Remove screws ①—④.
3. Raise the power amplifier PC board so that the pattern side faces up.
4. Remove solder from the power transistors.
5. Remove screws ⑤, ⑥ and remove the heatsinks together with the power transistors.
6. Remove the retaining screw from the defective power transistor and replace it.

■ Use of New-type Connector

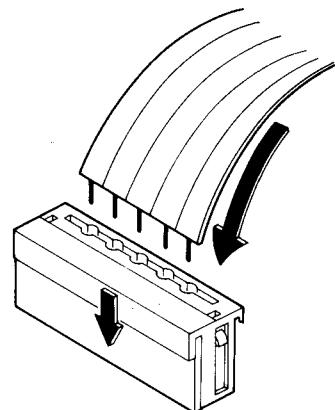
(1) Slide the cover upward.



(2) Extract the wires.

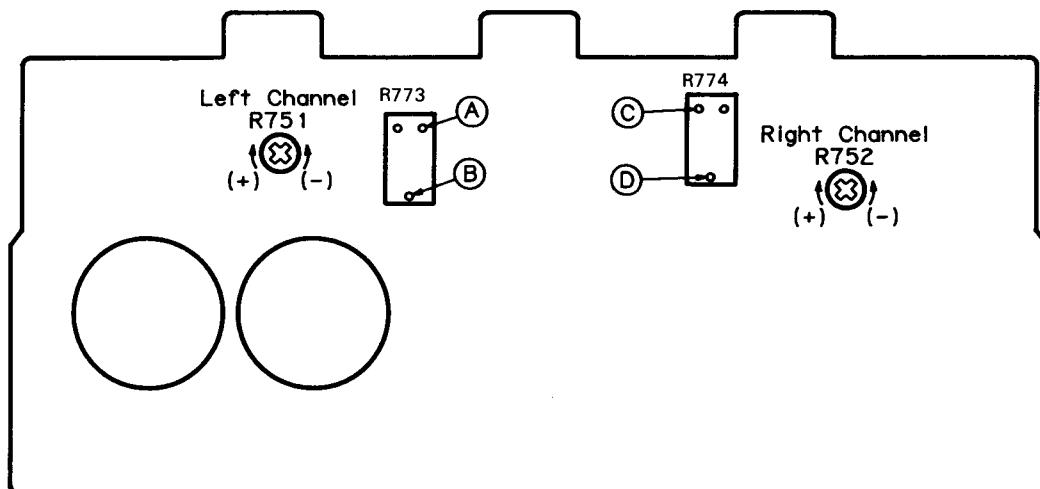


(3) Insert the wires after pushing in the cover.



Adjustment Procedures

■ Power Amplifier Idling Adjustment



1. Before tuning on the power, turn the semi-fixed resistors (R751 for L channel and R752 for R channel) of the power amplifier circuit board fully counterclockwise.

2. Adjust the semi-fixed resistor (R751 and R752) so that the voltage at the following test points of the power amplifier circuit board is within a range of 3 ~ 5 mV after the power is turned on.

L channel: Measure the voltage between test point (A) (emitter of Q761) and output at the test point (B).

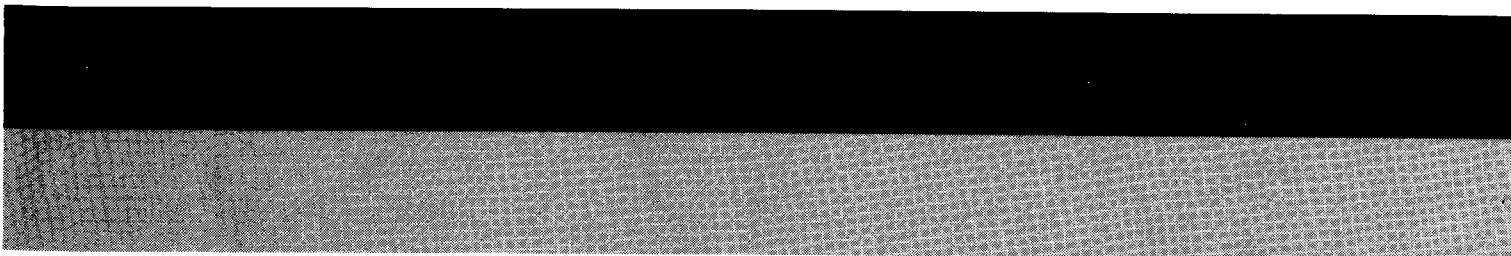
R channel: Meaure the voltage between test point (C) (emitter of Q762) and output at the test point (D).

3. Readjust resistors R751 and R752 about 10 minutes after the power is turned on (the heatsink temperature must be sufficiently high) so that the voltage at the test points becomes 11 mV.

Confirm that the voltage does not vary when the heat-sink temperature increases further.

Note: Be sure to perform the measurement with the probes and cabinet of the measuring equipment separated from the grounding terminals of AX-444BK or other measuring equipment.

AX-444BK



JVC

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(No. 20038)



Printed in Japan
8803 (G)

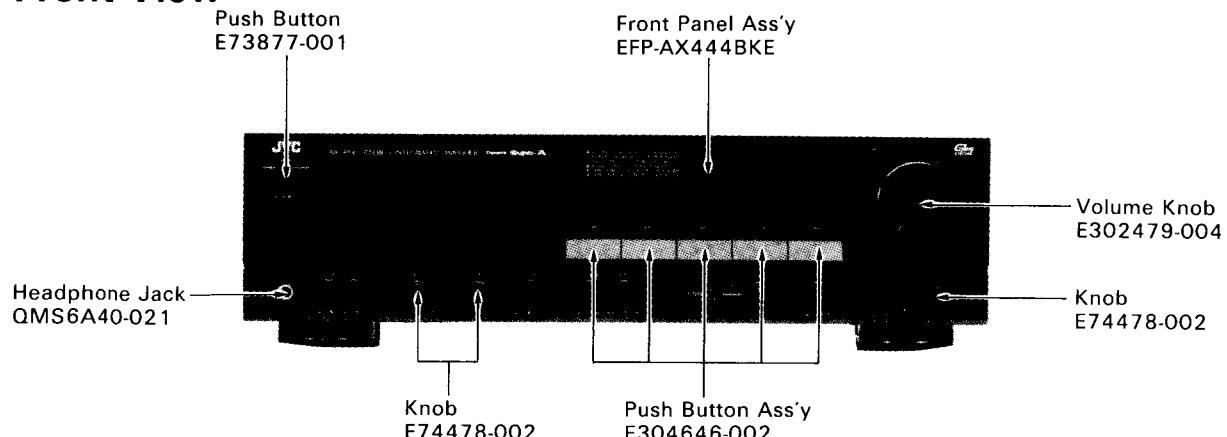
PARTS LIST

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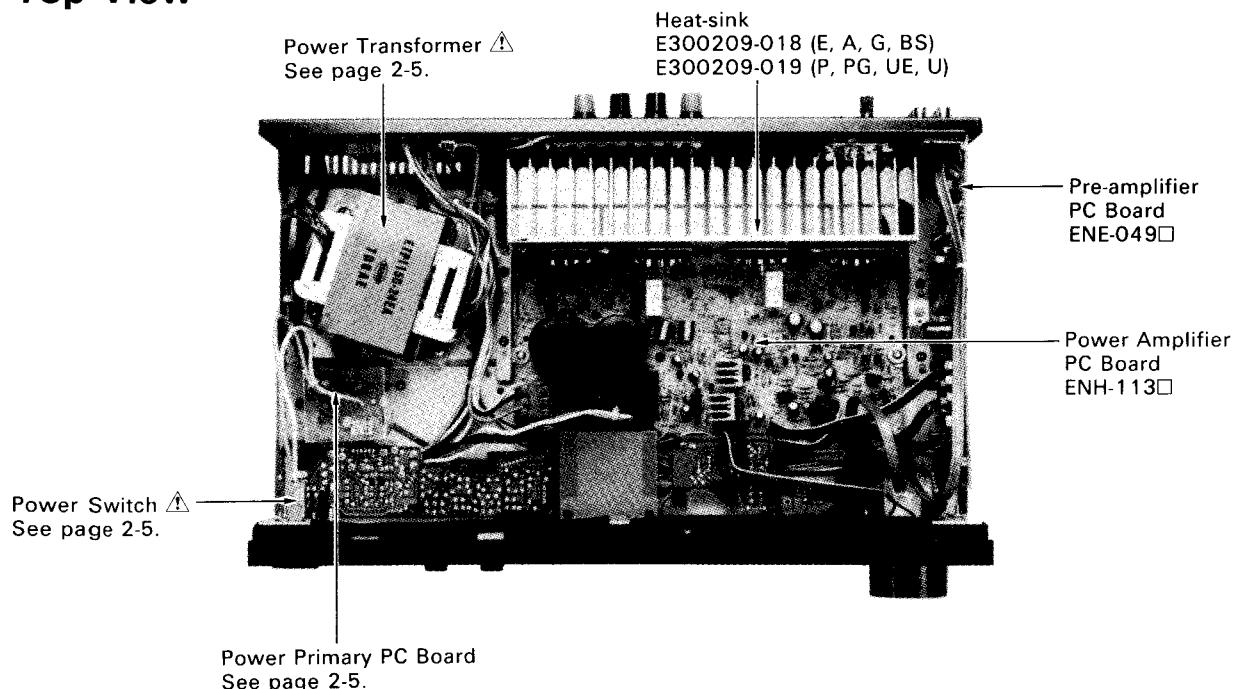
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Main Parts Locations

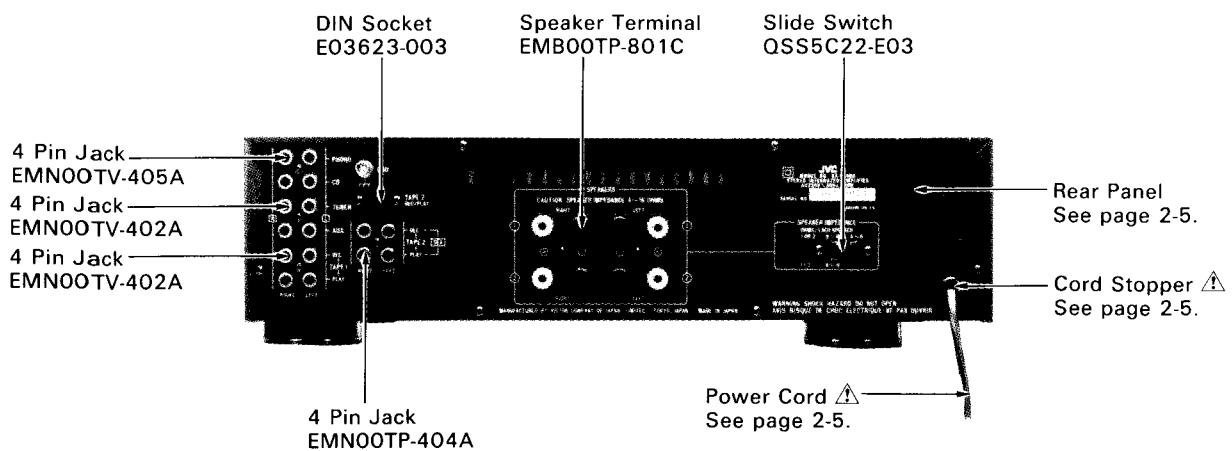
■ Front View



■ Top View

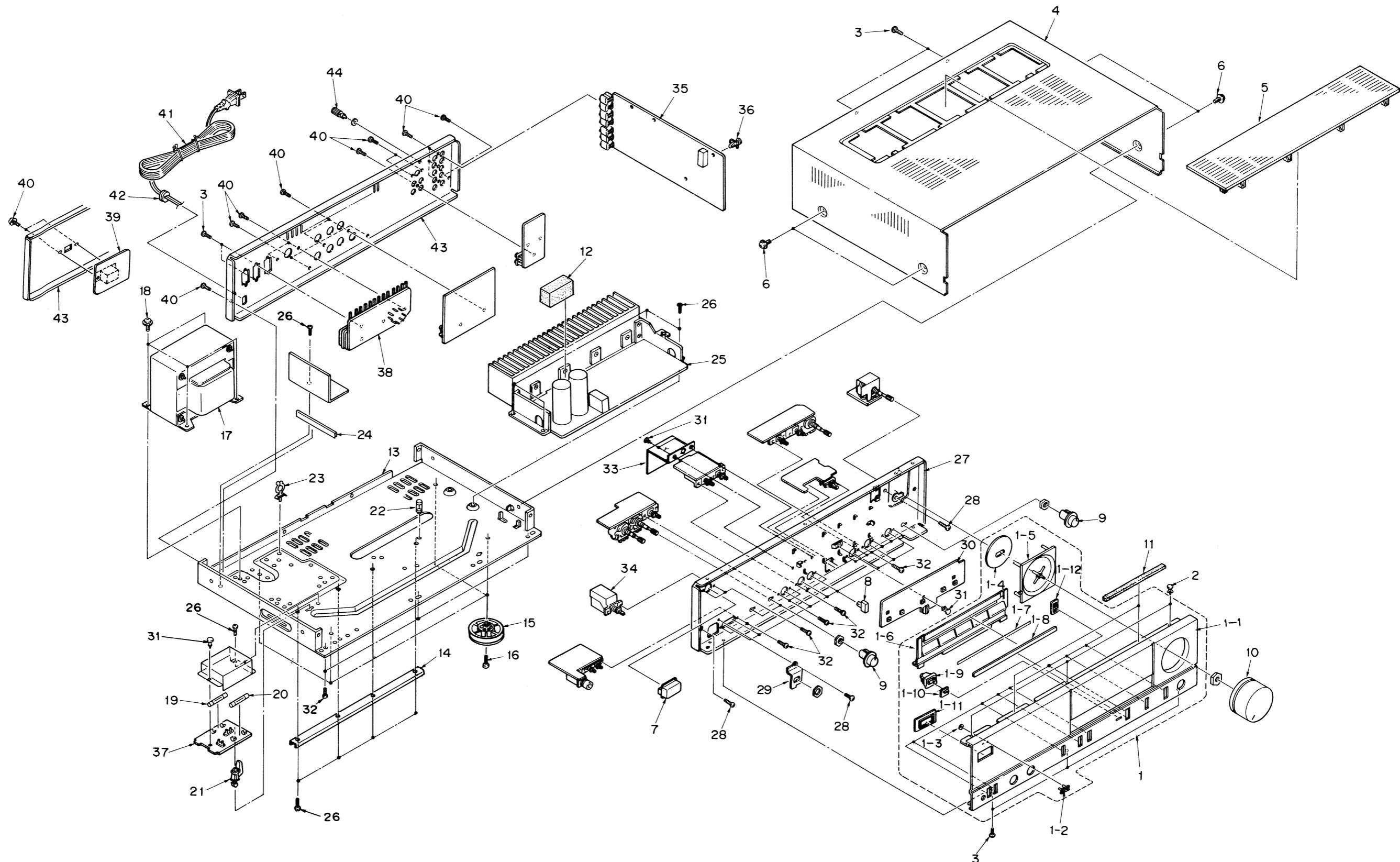


■ Rear View



⚠: Safety Parts

Exploded View and Parts List



Exploded View and Parts List

▲	Item	Parts Number	Parts Name	Q'ty	Description	Areas
	1 1-1 1-2 1-3 1-4 1-5 1-6	EPP-AX444BKE E25584-005 E72968-001 E60912-003 E74025-001 E304603-001 E304646-002	Front Panel Ass'y Front Panel JVC Mark Speed Nut Sheet Knob Ring Push Button Ass'y	1 1 1 1 1 1 1	Main Volume Function Selector	
	1-7 1-8 1-9 1-10 1-11 1-12	E72437-010 E304602-004 E305294-001 E74626-001 E73878-001 E73836-001	Sheet Indicator Sheet LED Holder Indicator Push Button Escutcheon Push Button Escutcheon	1 1 1 1 1 8	CD DIRECT POWER	
	2 3 4 5	E48729-009 SBSB3008M E24721-009 E25026-005 E23862-005	Plastic Rivet Screw Metal Cover Metal Cover Grill	3 7 1 1 1		A,G,P,PG,UE,U E,BS E,BS
	6 7 8 9 10	E61660-004 E73877-001 E73835-001 ET4478-002 E302479-004	Special Screw Push Button Push Button Knob Volume Knob	4 1 7 3 1	POWER	
	11 12 13 14 15	EXO170007N40S02 E3400-384 E10717-016 ET4745-001 E74522-001	Spacer Felt Spacer Chassis Base Bracket Foot Ass'y	2 1 1 1 4	Main Volume	
▲ ▲ ▲	16 17 18	SBSB3010Z ETP1150-20EA ETP1150-20BABS ETP1150-20FA E65389-002	Screw Power Transformer Power Transformer Power Transformer Special Screw	4 1 1 1 4		E,A,G BS P,PG,UE,U
▲ ▲ ▲	19 20 21 22	QMF51E2-2R5SBS QMF51A2-2R5S QMF51A2-4ROS E34455-001 E71335-002	Fuse Fuse Fuse Fastener Fastener	1 1 1 1 1	(F002 or F003) (F002 or F003) (F001)	BS except BS P,PG,UE,U
	23 24 25 26 27	QHW3059-001 E65788-002 ---- SBST3006Z E25586-001	Wire Clamp Spacer Power Amplifier PC Board Screw Front Bracket	1 1 1 4 1	(ENH-113□)	
	28 29 30 31 32	SBSB3008CC E73218-001 ---- E48729-008 SBST3006CC	Screw Headphone Bracket Front PC Board Plastic Rivet Screw	4 1 1 1 14	(ENE-049-2)	
▲ ▲ ▲	33 34 35	E74074-002 QSP1106-004 QSP1106-004BS QSP1106-005 ----	Shield Bracket Power Switch Power Switch Power Switch Pre-amplifier PC Board	1 1 1 1 1		E,A,G BS P,PG,UE,U
	36 37 38 39	E69384-002 ---- ---- ----	Fastener Power Primary PC Board Power Primary PC Board Voltage Selector PC Board Impedance Selector PC Board	1 1 1 1 1	(END-026A) (ENE-049-7) (TPS-318A) (END-047A)	P,PG,UE,U E,A,G,BS P,PG,UE,U E,A,G,BS
▲ ▲ ▲ ▲	40 41 42 43 44	E73273-001 QMP3900-200 QMP2560-244 QMP9017-008BS QMP7600-200	Special Screw Power Cord Power Cord Power Cord Power Cord	16 1 1 1 1		E,G A BS P,PG,UE,U
▲ ▲	42 43 44	QHS3876-162BS QHS3876-162 B25549-024 B25549-021 E70078-001	Cord Stopper Cord Stopper Rear Panel Rear Panel GND Terminal	1 1 1 1 1		BS except BS E,A,G,BS P,PG,UE,U

Note: The Marks for Designated Areas

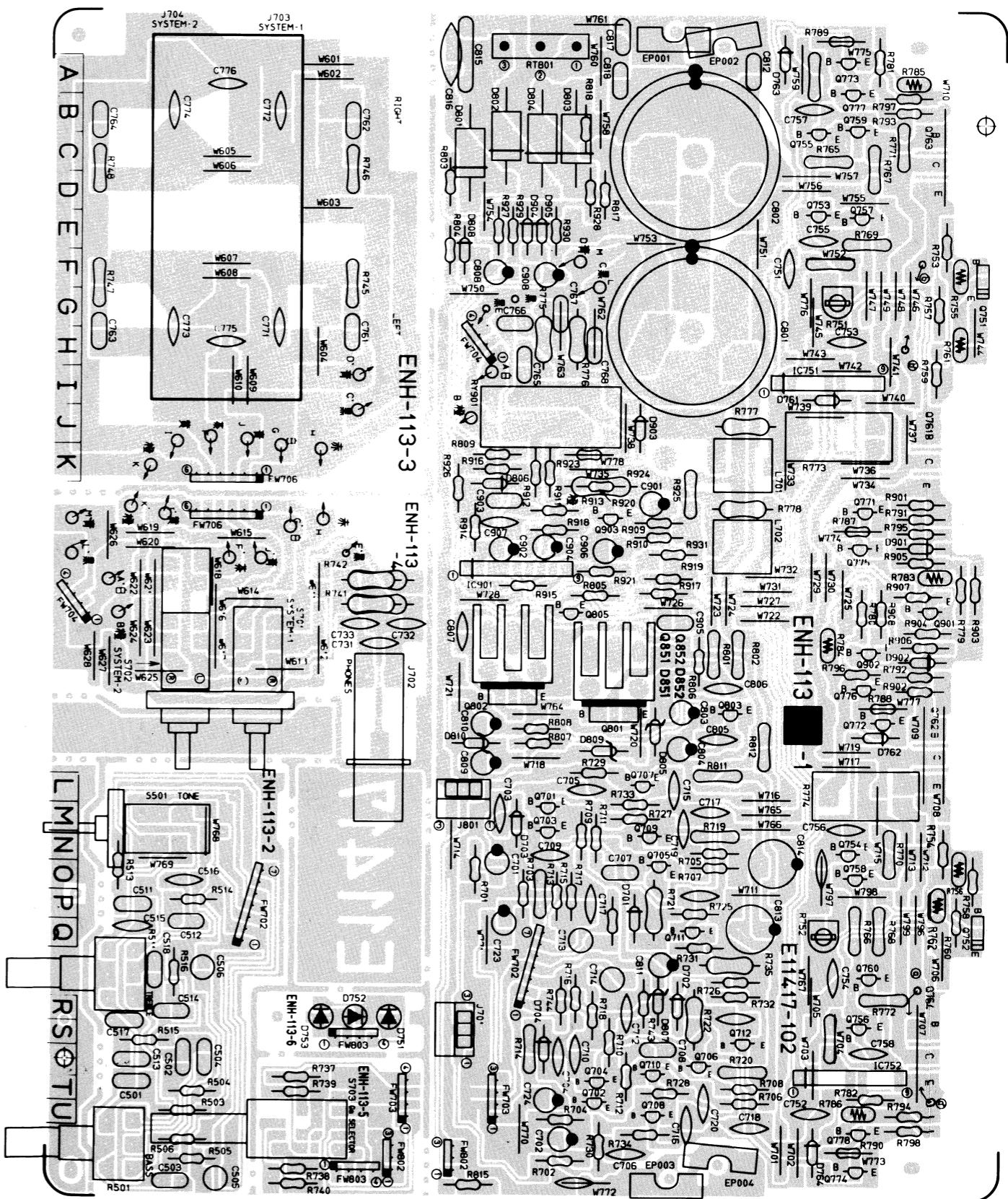
E	Europe	P,PC	U.S.Military Market
A	Australia	UE	Saudi Arabia
G	West Germany	U	Other Countries
BS	U.K.	No Mark indicates all areas.	

▲ Safety Parts

Printed Circuit Board Ass'y and Parts List

■ ENH-113 □ Power Amplifier PC Board

Note: ENH-113 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENH-113 D	U.S. Military Market & Other Countries
ENH-113 D	Saudi Arabia
ENH-113 E	Europe, Australia
ENH-113 E BS	U.K.
ENH-113 F	West Germany

TRANSISTORS

△ ITEM	PART NUMBER	DESCRIPTION	AREA	MAKER
Q701	2SC2240(A,B)	SILICON		TOSHIBA
Q702	2SC2240(A,B)	SILICON		TOSHIBA
Q703	2SC2240(A,B)	SILICON		TOSHIBA
Q704	2SC2240(A,B)	SILICON		TOSHIBA
Q705	2SA970(GR,BL)	SILICON		TOSHIBA
Q706	2SA970(GR,BL)	SILICON		TOSHIBA
Q707	2SA970(GR,BL)	SILICON		TOSHIBA
Q708	2SA970(GR,BL)	SILICON		TOSHIBA
Q709	2SA933LN(R,S)	SILICON		ROHM
Q710	2SA933LN(R,S)	SILICON		ROHM
Q711	2SC2240(GR,BL)	SILICON		TOSHIBA
Q712	2SC2240(GR,BL)	SILICON		TOSHIBA
Q751	2SD636(Q,R)	SILICON		MATSUSHITA
Q752	2SD636(Q,R)	SILICON		MATSUSHITA
Q753	2SC2240(BL)	SILICON		TOSHIBA
Q754	2SC2240(BL)	SILICON		TOSHIBA
Q755	2SA970(BL)	SILICON		TOSHIBA
Q756	2SA970(BL)	SILICON		TOSHIBA
Q757	2SC2235(O,Y)	SILICON		TOSHIBA
Q758	2SC2235(O,Y)	SILICON		TOSHIBA
Q759	2SA965(O,Y)	SILICON		TOSHIBA
Q760	2SA965(O,Y)	SILICON		TOSHIBA
Q761	2SD1148LB(O,R)	SILICON	D	TOSHIBA
Q761	2SD845LB(O,R)	SILICON	E	TOSHIBA
Q761	2SD845LB(O,R)	SILICON	F	TOSHIBA
Q762	2SD1148LB(O,R)	SILICON	D	TOSHIBA
Q762	2SD845LB(O,R)	SILICON	E	TOSHIBA
Q762	2SD845LB(O,R)	SILICON	F	TOSHIBA
Q763	2SB755LB(O,R)	SILICON		TOSHIBA
Q763	2SB755LB(O,R)	SILICON		TOSHIBA
Q763	2SB863LB(O,R)	SILICON	D	TOSHIBA
Q764	2SB755LB(O,R)	SILICON	E	TOSHIBA
Q764	2SB755LB(O,R)	SILICON	F	TOSHIBA
Q764	2SB863LB(O,R)	SILICON	D	TOSHIBA
Q775	2SC1740(R,S)	SILICON		ROHM
Q776	2SC1740(R,S)	SILICON		ROHM
Q777	2SA933(R,S)	SILICON		ROHM
Q778	2SA933(R,S)	SILICON		ROHM
Q801	2SD1666(R,S)	SILICON		SANYO
Q802	2SB1133(R,S)	SILICON		SANYO
Q803	2SA933(R,S)	SILICON		ROHM
Q805	2SC1740(R,S)	SILICON		ROHM
Q851	2SK246(GR)	FET		TOSHIBA
Q852	2SK246(GR)	FET		TOSHIBA
Q901	2SC2240(GR,BL)	SILICON		TOSHIBA
Q902	2SC2240(GR,BL)	SILICON		TOSHIBA
Q903	2SA970(GR,BL)	SILICON		TOSHIBA

I. C. S

△ ITEM	PART NUMBER	DESCRIPTION	AREA	MAKER
IC751	VC5022(X,Y)	I.C.		ROHM
IC752	VC5022(X,Y)	I.C.		ROHM
IC901	TA7317P	I.C.		TOSHIBA

DIODES

△ ITEM	PART NUMBER	DESCRIPTION	AREA	
			MAKER	
D701	1S2076-31	SILICON	HITACHI	
D702	1S2076-31	SILICON	HITACHI	
D703	1S2076-31	SILICON	HITACHI	
D704	1S2076-31	SILICON	HITACHI	
D761	1S2076-31	SILICON	HITACHI	
D762	1S2076-31	SILICON	HITACHI	
D763	1S2076-31	SILICON	HITACHI	
D764	1S2076-31	SILICON	HITACHI	
D801	S3V20F	SILICON	SHINDENGEN	
D802	S3V20F	SILICON	SHINDENGEN	
D803	S3V20F	SILICON	SHINDENGEN	
D804	S3V20F	SILICON	SHINDENGEN	
D805	HZ15-1LTD	ZENER	HITACHI	
D806	1S2076-31	SILICON	HITACHI	
D807	RD18EB3	ZENER	NEC	
D808	1S2076-31	SILICON	HITACHI	
D809	RD18EB3	ZENER	NEC	
D810	RD18EB3	ZENER	NEC	
D851	MTZ13JC	ZENER	ROHM	
D852	MTZ13JC	ZENER	ROHM	
D901	1S2076-31	SILICON	HITACHI	
D902	1S2076-31	SILICON	HITACHI	
D903	1S2076-31	SILICON	HITACHI	
D904	1S2076-31	SILICON	HITACHI	
D905	1S2076-31	SILICON	HITACHI	

CAPACITORS

△ ITEM	PART NUMBER	DESCRIPTION	AREA
C501	QFN81HK-153	0.015MF	50V MYLAR
C502	QFN81HK-153	0.015MF	50V MYLAR
C503	QFN81HK-823	0.082MF	50V MYLAR
C504	QFN81HK-823	0.082MF	50V MYLAR
C505	QEN51HM-475	4.7MF	50V NON POLE
C506	QEN51HM-475	4.7MF	50V NON POLE
C511	QFN81HK-332	3300PF	50V MYLAR
C512	QFN81HK-332	3300PF	50V MYLAR
C513	QFN81HK-183	0.018MF	50V MYLAR
C514	QFN81HK-183	0.018MF	50V MYLAR
C515	QCS21HJ-221	220PF	50V CERAMIC
C516	QCS21HJ-221	220PF	50V CERAMIC
C517	QFN81HK-122	1200PF	50V MYLAR
C518	QFN81HK-122	1200PF	50V MYLAR
C701	EETB2AM-106E	10MF	100V ELECTRO
C702	EETB2AM-106E	10MF	100V ELECTRO
C703	QCS21HJ-470	47PF	50V CERAMIC
C704	QCS21HJ-470	47PF	50V CERAMIC
C705	QCS21HJ-101	100PF	50V CERAMIC
C705	QCS21HJ-101	100PF	50V CERAMIC
C706	QCS21HJ-101	100PF	50V CERAMIC
C707	QFN81HK-332	3300PF	50V MYLAR
C708	QFN81HK-332	3300PF	50V MYLAR
C709	QCS21HJ-100	10PF	50V CERAMIC
C710	QCS21HJ-100	10PF	50V CERAMIC
C713	QEN51HM-475	4.7MF	50V NON POLE
C714	QEN51HM-475	4.7MF	50V NON POLE
C715	QCS21HJ-330	33PF	50V CERAMIC
C716	QCS21HJ-330	33PF	50V CERAMIC
C717	QCS21HJ-330	33PF	50V CERAMIC
C718	QCS21HJ-330	33PF	50V CERAMIC
C719	QCS21HJ-220	22PF	50V CERAMIC
C720	QCS21HJ-220	22PF	50V CERAMIC
C723	QETB1CM-476	47MF	16V ELECTRO
C724	QETB1CM-476	47MF	16V ELECTRO
C731	QCS21HJ-101	100PF	50V CERAMIC
C732	QCS21HJ-101	100PF	50V CERAMIC
C733	QCS21HJ-101	100PF	50V CERAMIC
C751	QCF21HP-103	0.01MF	50V CERAMIC
C752	QCF21HP-103	0.01MF	50V CERAMIC
C753	QCF21HP-103	0.01MF	50V CERAMIC
C754	QCF21HP-103	0.01MF	50V CERAMIC
C755	QCS32HJ-680	68PF	500V CERAMIC
C756	QCS32HJ-680	68PF	500V CERAMIC
C757	QCS32HJ-680	68PF	500V CERAMIC
C758	QCS32HJ-680	68PF	500V CERAMIC
C761	QFN81HK-103	0.01MF	50V MYLAR
C762	QFN81HK-103	0.01MF	50V MYLAR
C763	QFN81HK-103	0.01MF	50V MYLAR
C764	QFN81HK-103	0.01MF	50V MYLAR
C765	QFN81HK-104	0.1MF	50V MYLAR
C765	QFN81HK-104	0.1MF	50V MYLAR
C766	QFN81HK-104	0.1MF	50V MYLAR
C766	QFN81HK-104	0.1MF	50V MYLAR

△ : SAFETY PARTS

C A P A C I T O R S

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C766	QFN81HK-104	0.1MF	50V	MYLAR	F
	C766	QFN81HK-473	0.047MF	50V	MYLAR	D
	C767	QFN81HK-104	0.1MF	50V	MYLAR	E
	C767	QFN81HK-104	0.1MF	50V	MYLAR	F
	C768	QFN81HK-104	0.1MF	50V	MYLAR	E
	C768	QFN81HK-104	0.1MF	50V	MYLAR	F
	C801	EEW6304-109E	10000MF	63V	ELECTRO	
	C802	EEW6304-109E	10000MF	63V	ELECTRO	
	C803	QETB1HM-476	47MF	50V	ELECTRO	
	C804	QETB1HM-476	47MF	50V	ELECTRO	
	C805	QCS21HJ-101	100PF	50V	CERAMIC	
	C808	QETB1HM-105	1MF	50V	ELECTRO	
	C809	QETB1EM-476	47MF	25V	ELECTRO	
	C810	QETB1EM-476	47MF	25V	ELECTRO	
	C811	QETB1EM-106	10MF	25V	ELECTRO	
	C812	QFN32AK-472	4700PF	100V	MYLAR	F
	C813	QETB1JM-107	100MF	63V	ELECTRO	
	C814	QETB1JM-107	100MF	63V	ELECTRO	
	C815	QFH42EK-104	0.1MF	250V	M.MYLAR	
	C816	QCE22HP-103A	0.01MF	500V	CERAMIC	D
	C816	QCE22HP-103A	0.01MF	500V	CERAMIC	E
	C816	QFN32AK-104	0.1MF	100V	MYLAR	F
	C817	QFN32AK-472	4700PF	100V	MYLAR	F
	C818	QFN32AK-104	0.1MF	100V	MYLAR	F
	C901	QETB1HM-226	22MF	50V	ELECTRO	
	C902	QETB1AM-107	100MF	10V	ELECTRO	
	C903	QFN81HK-102	1000PF	50V	MYLAR	
	C904	QETB1HM-475	4.7MF	50V	ELECTRO	
	C905	QFN81HK-153	0.015MF	50V	MYLAR	
	C906	QETB1HM-226	22MF	50V	ELECTRO	
	C907	QCF21HP-223	0.022MF	50V	CERAMIC	
	C908	QETB1HM-105	1MF	50V	ELECTRO	

R E S I S T O R S

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R743	QRD148J-104S	100K	1/4W	CARBON	
	R744	QRD148J-104S	100K	1/4W	CARBON	
△	R745	QRD14CJ-100S	10	1/4W	UNF.CARBON	F
△	R746	QRD14CJ-100S	10	1/4W	UNF.CARBON	F
△	R747	QRD14CJ-100S	10	1/4W	UNF.CARBON	F
△	R748	QRD14CJ-100S	10	1/4W	UNF.CARBON	F
	R751	QVZ3518-471	470	0.1W	VARIABLE	
	R752	QVZ3518-471	470	0.1W	VARIABLE	
	R753	QRD148J-101S	100	1/4W	CARBON	
	R754	QRD148J-101S	100	1/4W	CARBON	
	R755	ERT-D2WFL351S	350	1/4W	THERMISTOR	
	R756	ERT-D2WFL351S	350	1/4W	THERMISTOR	
	R757	QRD148J-471S	470	1/4W	CARBON	
	R758	QRD148J-471S	470	1/4W	CARBON	
	R759	QRD148J-391S	390	1/4W	CARBON	
	R760	QRD148J-391S	390	1/4W	CARBON	
	R761	ERT-D2WHL202S	2K	1/4W	THERMISTOR	
	R762	ERT-D2WHL202S	2K	1/4W	THERMISTOR	
△	R765	QRZ0077-272	2.7K	1/4W	FUSIBLE	
△	R766	QRZ0077-272	2.7K	1/4W	FUSIBLE	
△	R767	QRZ0077-471	470	1/4W	FUSIBLE	
△	R768	QRZ0077-471	470	1/4W	FUSIBLE	
△	R769	QRZ0077-100	10	1/4W	FUSIBLE	
△	R770	QRZ0077-100	10	1/4W	FUSIBLE	
△	R771	QRZ0077-100	10	1/4W	FUSIBLE	
△	R772	QRZ0077-100	10	1/4W	FUSIBLE	
△	R773	ERF032K-R22	0.22	3W	CEMENT	
△	R774	ERF032K-R22	0.22	3W	CEMENT	
△	R775	QRG012J-100A	10	1W	O.M.FILM	
△	R776	QRG012J-100A	10	1W	O.M.FILM	
△	R777	QRD125J-330	33	1/2W	UNF.CARBON	
△	R778	QRD125J-330	33	1/2W	UNF.CARBON	
△	R791	QRD148J-331S	330	1/4W	CARBON	D
△	R791	QRD148J-431S	430	1/4W	CARBON	E
△	R791	QRD148J-431S	430	1/4W	CARBON	F
△	R792	QRD148J-331S	330	1/4W	CARBON	D
△	R792	QRD148J-431S	430	1/4W	CARBON	E
△	R792	QRD148J-431S	430	1/4W	CARBON	F
△	R793	QRD148J-331S	330	1/4W	CARBON	D
△	R793	QRD148J-431S	430	1/4W	CARBON	E
△	R793	QRD148J-431S	430	1/4W	CARBON	F
△	R794	QRD148J-331S	330	1/4W	CARBON	D
△	R794	QRD148J-431S	430	1/4W	CARBON	E
△	R794	QRD148J-431S	430	1/4W	CARBON	F
	R795	QRD148J-221S	220	1/4W	CARBON	
	R796	QRD148J-221S	220	1/4W	CARBON	
	R797	QRD148J-221S	220	1/4W	CARBON	
	R798	QRD148J-221S	220	1/4W	CARBON	
△	R801	QRZ0077-330	33	1/4W	FUSIBLE	
△	R802	QRZ0077-330	33	1/4W	FUSIBLE	
	R803	QRD148J-123S	12K	1/4W	CARBON	
	R804	QRD148J-682S	6.8K	1/4W	CARBON	
	R805	QRD148J-823S	82K	1/4W	CARBON	
	R806	QRD148J-221S	220	1/4W	CARBON	
	R807	QRD148J-223S	22K	1/4W	CARBON	
	R808	QRD148J-203S	20K	1/4W	CARBON	
	R809	QRD148J-563S	56K	1/4W	CARBON	
△	R811	QRZ0077-330	33	1/4W	FUSIBLE	
△	R812	QRZ0077-330	33	1/4W	FUSIBLE	
	R817	QRD148J-104S	100K	1/4W	CARBON	
	R818	QRD148J-104S	100K	1/4W	CARBON	
	R901	QRD148J-272S	2.7K	1/4W	CARBON	
	R902	QRD148J-272S	2.7K	1/4W	CARBON	
	R903	QRD148J-183S	18K	1/4W	CARBON	
	R904	QRD148J-183S	18K	1/4W	CARBON	
	R905	QRD148J-123S	12K	1/4W	CARBON	
	R906	QRD148J-123S	12K	1/4W	CARBON	
	R907	QRD148J-223S	22K	1/4W	CARBON	
	R908	QRD148J-223S	22K	1/4W	CARBON	
	R909	QRD148J-332S	3.3K	1/4W	CARBON	
	R910	QRD148J-103S	10K	1/4W	CARBON	
	R911	QRD148J-104S	100K	1/4W	CARBON	
	R912	QRD148J-823S	82K	1/4W	CARBON	
	R913	QRD148J-473S	47K	1/4W	CARBON	
	R914	QRD148J-104S	100K	1/4W	CARBON	
	R915	QRD148J-683S	68K	1/4W	CARBON	
	R916	QRD148J-683S	68K	1/4W	CARBON	
	R917	QRD148J-183S	18K	1/4W	CARBON	E
	R917	QRD148J-183S	18K	1/4W	CARBON	F

△ : SAFETY PARTS

RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R 91	QRD148J-203S	20K	1/4W	CARBON	D
	R 918	QRD148J-392S	3.9K	1/4W	CARBON	
	R 919	QRD148J-333S	33K	1/4W	CARBON	
	R 921	QRD148J-224S	220K	1/4W	CARBON	
	R 923	QRD148J-181S	180	1/4W	CARBON	D
	R 921	QRD148J-181S	180	1/4W	CARBON	E
	R 921	QRD148J-181S	180	1/4W	CARBON	F
△	R 924	QRG022J-152A	1.5K	2W	O.M.FILM	D
△	R 925	QRD14CJ-470S	47	1/4W	UNF.CARBON	
	R 924	QRD148J-822S	8.2K	1/4W	CARBON	
	R 921	QRD148J-123S	12K	1/4W	CARBON	
	R 921	QRD148J-123S	12K	1/4W	CARBON	
	R 921	QRD148J-682S	6.8K	1/4W	CARBON	D
	R 921	QRD148J-822S	8.2K	1/4W	CARBON	E
	R 921	QRD148J-822S	8.2K	1/4W	CARBON	F
	R 930	QRD148J-682S	6.8K	1/4W	CARBON	D
	R 930	QRD148J-822S	8.2K	1/4W	CARBON	E
	R 930	QRD148J-822S	8.2K	1/4W	CARBON	F
	R 931	QRD148J-273S	27K	1/4W	CARBON	E
	R 931	QRD148J-273S	27K	1/4W	CARBON	F
	R 931	QRD148J-303S	30K	1/4W	CARBON	D

△ : SAFETY PARTS

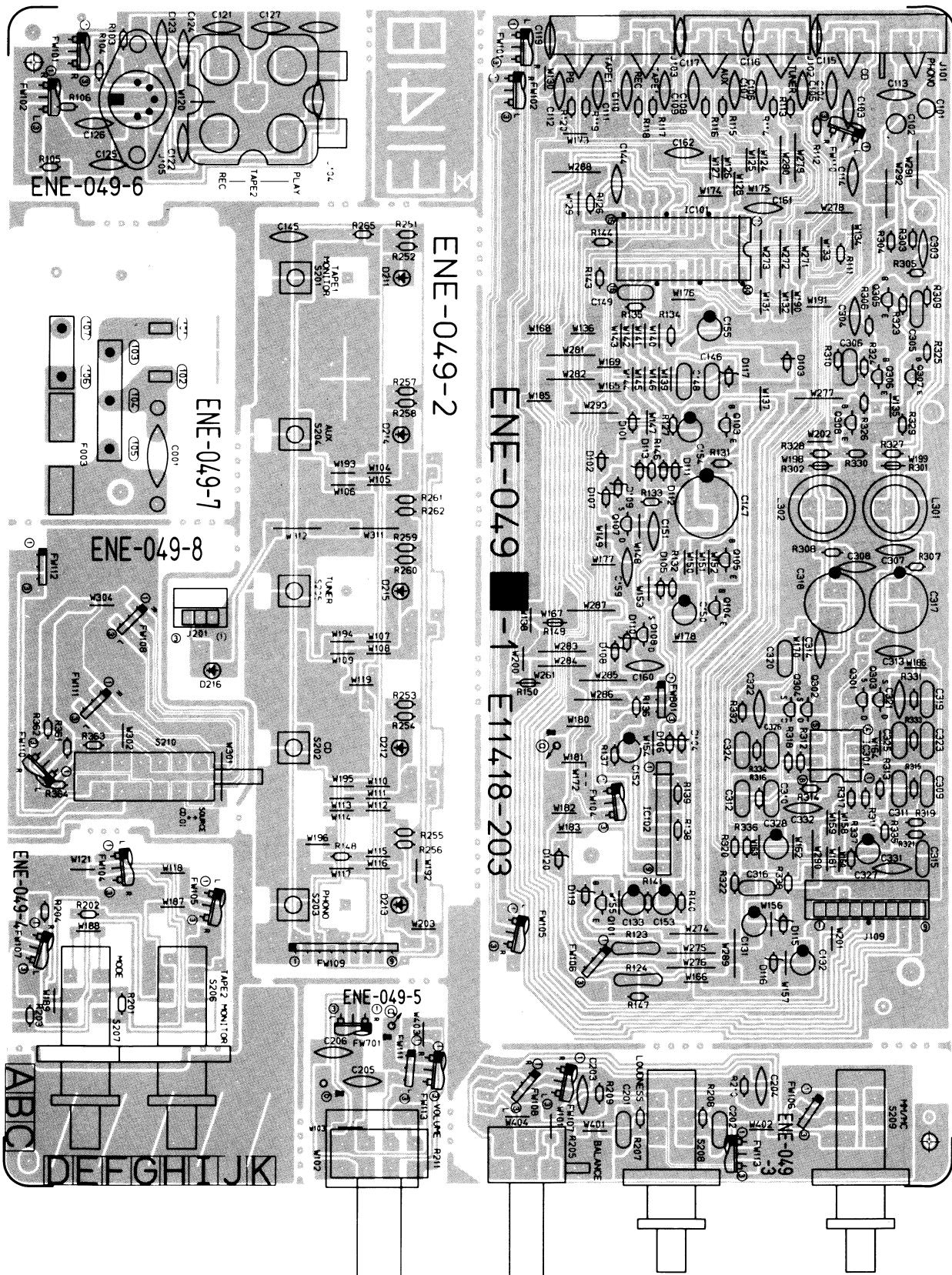
OTHERS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
		EWS013-255H	SOCKET WIRE		E	
		EWS013-255H	SOCKET WIRE		F	
		E11417-102	PC BOARD			
		E300209-018	HEAT SINK		E	
		E300209-018	HEAT SINK		F	
		E300209-019	HEAT SINK		D	
		E33754-001	BAND			
		E67292-002	H.S.BRACKET(L)			
		E67293-002	BRACKET			
		E70945-H25	HEAT SINK			
		E73265-001	SCREW			
		E73525-001	SCREW			
		SBSB3008CC	SCREW			
		SBSB3008Z	SCREW			
		WABS3000W	WASHER			
	J 701	EMV7112-003	CONNECTOR			
	J 702	QMS6A40-021	HEADPHONE JACK			
	J 703	EMB00TP-801C	SPEAKER TERMINAL			
	J 704	EMB00TP-801C	SPEAKER TERMINAL			
	J 801	EMV7112-003	CONNECTOR			
	L 701	EQL0001-1R0	INDUCTOR			
	L 702	EQL0001-1R0	INDUCTOR			
	S 501	QST4102-E08	PUSH SWITCH			
	S 701	QST4241-E10	PUSH SWITCH			
	S 702	QST4241-E10	PUSH SWITCH			
	EP001	E70859-001	EARTH PLATE		F	
	EP003	E70859-001	EARTH PLATE			
	FW702	EWR37B-30SST	FLAT WIRE			
	RT801	E67764-103	WRAPPING TERMINAL			
	RY901	ESKD5D24-218	RELAY			

△ : SAFETY PARTS

■ ENE-049 □ Pre-amplifier PC Board

Note: ENE-049 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENE-049 A	U.S. Military Market & Other Countries
ENE-049 A	Saudi Arabia
ENE-049 B	Europe, Australia
ENE-049 C	West Germany
ENE-049 D BS	U.K.

TRANSISTORS

△ ITEM	PART NUMBER	DESCRIPTION	AREA	MAKER
Q 101	DTA144EN	SILICON	ROHM	
Q 103	2SC2389(S,E)	SILICON	ROHM	
Q 104	DTC144EN	SILICON	ROHM	
Q 105	DTA144EN	SILICON	ROHM	
Q 107	2SK163(L1)	F.E.T	NEC	
Q 108	2SK163(L1)	F.E.T	NEC	
Q 301	2SK170(BL)	F.E.T	TOSHIBA	
Q 302	2SK170(BL)	F.E.T	TOSHIBA	
Q 303	2SK170(BL)	F.E.T	TOSHIBA	
Q 304	2SK170(BL)	F.E.T	TOSHIBA	
Q 305	2SD655(E,F)	SILICON	HITACHI	
Q 306	2SD655(E,F)	SILICON	HITACHI	
Q 307	2SD655(E,F)	SILICON	HITACHI	
Q 308	2SD655(E,F)	SILICON	HITACHI	

I. C. S

△ ITEM	PART NUMBER	DESCRIPTION	AREA	MAKER
IC101	LC7818	I.C.	SANYO	
IC102	TA7317P	I.C.	TOSHIBA	
IC301	MS219P	I.C.	MITSUBISHI	

DIODES

△ ITEM	PART NUMBER	DESCRIPTION	AREA	MAKER
D101	1SS133	SILICON	ROHM	
D102	1SS133	SILICON	ROHM	
D103	1SS133	SILICON	ROHM	
D104	1SS133	SILICON	ROHM	
D105	1SS133	SILICON	ROHM	
D106	1SS133	SILICON	ROHM	
D111	1SS133	SILICON	ROHM	
D112	1SS133	SILICON	ROHM	
D113	MTZ5.6JC	ZENER	ROHM	
D115	MTZ13JC	ZENER	ROHM	
D116	MTZ13JC	ZENER	ROHM	
D117	MTZ6.8JC	ZENER	ROHM	
D211	SLR-34VR3F	L.E.D.	ROHM	
D212	SLR-34DU3F	L.E.D.	ROHM	
D213	SLR-34DU3F	L.E.D.	ROHM	
D214	SLR-34DU3F	L.E.D.	ROHM	
D215	SLR-34DU3F	L.E.D.	ROHM	
D216	SLV-31YC3F	L.E.D.	ROHM	

CAPACITORS

△ ITEM	PART NUMBER	DESCRIPTION	AREA
C001	QCZ9019-472	4700PF	B
C001	QCZ9019-472	4700PF	C
C001	QCZ9019-472BS	4700PF	DBS
C101	QFS81HJ-221	220PF	C
C102	QFS81HJ-221	220PF	C
C103	QCS21HJ-221	220PF	C
C104	QCS21HJ-221	220PF	C
C105	QCS21HJ-221	220PF	C
C106	QCS21HJ-221	220PF	C
C107	QCS21HJ-221	220PF	C
C108	QCS21HJ-221	220PF	C
C109	QCS21HJ-221	220PF	C
C110	QCS21HJ-221	220PF	C
C111	QCS21HJ-221	220PF	C
C112	QCS21HJ-221	220PF	C
C113	QCF21HP-473	0.047MF	C
C114	QCF21HP-223	0.022MF	C
C115	QCF21HP-223	0.022MF	C
C116	QCF21HP-223	0.022MF	C
C117	QCF21HP-223	0.022MF	C
C119	QCF21HP-223	0.022MF	C
C121	QCS21HJ-221	220PF	C
C122	QCS21HJ-221	220PF	C
C125	QCS21HJ-221	220PF	C
C126	QCS21HJ-221	220PF	C
C127	QCF21HP-223	0.022MF	C
C131	QETB1EM-107	100MF	C
C132	QETB1EM-107	100MF	C
C133	QETB1HM-475	4.7MF	C
C146	QFN81HJ-562	5600PF	C
C147	EEZ0502-479	47000MF	C
C148	QFN81HJ-562	5600PF	C
C149	QFN81HK-473	0.047MF	C
C150	QETB1HM-225	2.2MF	C
C151	QCS21HJ-331	330PF	C
C152	QETB1CM-226	22MF	C
C153	QETB1HM-475	4.7MF	C
C154	QETB1CM-107	100MF	C
C155	QETB1HM-474	0.47MF	C
C201	QFN81HK-333	0.033MF	C
C202	QFN81HK-333	0.033MF	C
C205	QCS21HJ-470	47PF	C
C206	QCS21HJ-470	47PF	C
C303	QCS21HJ-151	150PF	C
C304	QCS21HJ-151	150PF	C
C305	QFN81HK-103	0.01MF	C
C306	QFN81HK-103	0.01MF	C
C307	QCS21HJ-331	330PF	C
C307	QCS21HJ-470	47PF	C
C307	QCS21HJ-470	47PF	C
C308	QCS21HJ-331	330PF	C
C308	QCS21HJ-470	47PF	C
C308	QCS21HJ-470	47PF	C
C308	QCS21HJ-470	47PF	C
C309	QFN81HK-392	3900PF	C
C310	QFN81HK-392	3900PF	C
C311	QFN81HK-822	8200PF	C
C312	QFN81HK-822	8200PF	C
C313	QCS21HJ-151	150PF	C
C314	QCS21HJ-151	150PF	C
C315	QFN81HK-473	0.047MF	C
C316	QFN81HK-473	0.047MF	C
C317	QETB0JM-228	2200MF	C
C318	QETB0JM-228	2200MF	C
C319	QFN81HJ-472	4700PF	C
C320	QFN81HJ-472	4700PF	C
C321	QCS21HJ-331	330PF	C
C322	QCS21HJ-331	330PF	C
C323	QFN81HJ-153	0.015MF	C
C324	QFN81HJ-153	0.015MF	C
C325	QFN81HJ-272	2700PF	C
C326	QFN81HJ-272	2700PF	C
C327	EETB2AM-106E	10MF	C
C328	EETB2AM-106E	10MF	C

RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	R103	QRD167J-104	100K 1/6W CARBON	
	R104	QRD167J-104	100K 1/6W CARBON	
	R105	QRD167J-471	470 1/6W CARBON	
	R106	QRD167J-471	470 1/6W CARBON	
	R111	QRD167J-471	470 1/6W CARBON	
	R112	QRD167J-471	470 1/6W CARBON	
	R113	QRD167J-471	470 1/6W CARBON	
	R114	QRD167J-471	470 1/6W CARBON	
	R115	QRD167J-471	470 1/6W CARBON	
	R116	QRD167J-471	470 1/6W CARBON	
	R117	QRD167J-471	470 1/6W CARBON	
	R118	QRD167J-471	470 1/6W CARBON	
	R119	QRD167J-471	470 1/6W CARBON	
	R120	QRD167J-471	470 1/6W CARBON	
△	R123	QRZ0077-101	100 1/4W FUSIBLE	
△	R124	QRZ0077-101	100 1/4W FUSIBLE	
	R126	QRD167J-104	100K 1/6W CARBON	
	R127	QRD167J-104	100K 1/6W CARBON	
	R131	QRD167J-103	10K 1/6W CARBON	
	R132	QRD167J-103	10K 1/6W CARBON	
	R133	QRD167J-105	1M 1/6W CARBON	
	R134	QRD167J-103	10K 1/6W CARBON	
	R135	QRD167J-474	470K 1/6W CARBON	
	R136	QRD167J-562	5.6K 1/6W CARBON	
	R137	QRD167J-473	47K 1/6W CARBON	
	R138	QRD167J-392	3.9K 1/6W CARBON	
	R139	QRD167J-104	100K 1/6W CARBON	
	R140	QRD167J-104	100K 1/6W CARBON	
	R141	QRD167J-223	22K 1/6W CARBON	
	R143	QRD167J-102	1K 1/6W CARBON	
	R144	QRD167J-102	1K 1/6W CARBON	
	R146	QRD167J-122	1.2K 1/6W CARBON	
	R147	QRD167J-473	47K 1/6W CARBON	
	R148	QRD167J-273	27K 1/6W CARBON	
	R149	QRD167J-182	1.8K 1/6W CARBON	
	R150	QRD167J-182	1.8K 1/6W CARBON	
	R201	QRD167J-562	5.6K 1/6W CARBON	
	R202	QRD167J-562	5.6K 1/6W CARBON	
	R203	QRD167J-472	4.7K 1/6W CARBON	
	R204	QRD167J-472	4.7K 1/6W CARBON	
	R205	QVD98W-EF5B	250K VARIABLE	
	R207	QRD167J-223	22K 1/6W CARBON	
	R208	QRD167J-223	22K 1/6W CARBON	
	R211	QVD8A7B-AF5VA	250K VARIABLE	
	R251	QRD167J-122	1.2K 1/6W CARBON	
	R252	QRD167J-122	1.2K 1/6W CARBON	
	R253	QRD167J-122	1.2K 1/6W CARBON	
	R254	QRD167J-122	1.2K 1/6W CARBON	
	R255	QRD167J-122	1.2K 1/6W CARBON	
	R256	QRD167J-122	1.2K 1/6W CARBON	
	R257	QRD167J-122	1.2K 1/6W CARBON	
	R258	QRD167J-122	1.2K 1/6W CARBON	
	R259	QRD167J-122	1.2K 1/6W CARBON	
	R260	QRD167J-122	1.2K 1/6W CARBON	
	R261	QRD167J-122	1.2K 1/6W CARBON	
	R262	QRD167J-122	1.2K 1/6W CARBON	
	R265	QRD167J-104	100K 1/6W CARBON	
	R301	QRD167J-102	1K 1/6W CARBON	C
	R302	QRD167J-102	1K 1/6W CARBON	C
	R303	QRD167J-473	47K 1/6W CARBON	
	R304	QRD167J-473	47K 1/6W CARBON	
	R305	QRD167J-471	470 1/6W CARBON	
	R306	QRD167J-471	470 1/6W CARBON	
	R307	QRD167J-5R6	5.6 1/6W CARBON	
	R308	QRD167J-5R6	5.6 1/6W CARBON	
	R309	QRD167J-101	100 1/6W CARBON	
	R310	QRD167J-101	100 1/6W CARBON	
	R311	QRD167J-562	5.6K 1/6W CARBON	
	R312	QRD167J-562	5.6K 1/6W CARBON	
	R313	QRD167J-270	27 1/6W CARBON	
	R314	QRD167J-270	27 1/6W CARBON	
	R315	QRD167J-561	560 1/6W CARBON	
	R316	QRD167J-561	560 1/6W CARBON	
	R317	QRD167J-562	5.6K 1/6W CARBON	
	R318	QRD167J-562	5.6K 1/6W CARBON	
	R319	QRD167J-222	2.2K 1/6W CARBON	
	R320	QRD167J-222	2.2K 1/6W CARBON	
	R321	QRD167J-272	2.7K 1/6W CARBON	
	R322	QRD167J-272	2.7K 1/6W CARBON	
	R323	QRD167J-273	27K 1/6W CARBON	
	R324	QRD167J-273	27K 1/6W CARBON	
	R325	QRD167J-273	27K 1/6W CARBON	
	R326	QRD167J-273	27K 1/6W CARBON	
	R327	QRD167J-150	15 1/6W CARBON	C
	R327	QRD167J-180	18 1/6W CARBON	A
	R327	QRD167J-180	18 1/6W CARBON	B
	R327	QRD167J-180	18 1/6W CARBON	DBS
	R328	QRD167J-150	15 1/6W CARBON	C
	R328	QRD167J-180	18 1/6W CARBON	A
	R328	QRD167J-180	18 1/6W CARBON	B

RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	R328	QRD167J-180	18 1/6W CARBON	DBS
	R329	QRD167J-221	220 1/6W CARBON	
	R330	QRD167J-221	220 1/6W CARBON	
	R331	QRD167J-153	15K 1/6W CARBON	
	R332	QRD167J-153	15K 1/6W CARBON	
	R333	QRD167J-184	180K 1/6W CARBON	
	R334	QRD167J-184	180K 1/6W CARBON	
	R335	QRD167J-331	330 1/6W CARBON	
	R336	QRD167J-331	330 1/6W CARBON	
	R337	QRD167J-104	100K 1/6W CARBON	
	R338	QRD167J-104	100K 1/6W CARBON	
	R363	QRD167J-332	3.3K 1/6W CARBON	
	R364	QRD167J-332	3.3K 1/6W CARBON	

△ : SAFETY PARTS

OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
		EMG7331-001	FUSE CLIP	B
		EMG7331-001	FUSE CLIP	C
		EMG7331-001	FUSE CLIP	DBS
		EN2006-001	SHIELD CASE	C
		EWT011-091	TERMINAL WIRE	
		E03532-001	SHIELD CASE	C
		E11418-203	PC BOARD	A
		E11418-203	PC BOARD	B
		E11418-203	PC BOARD	C
		E11418-203BS	PC BOARD	DBS
		E65508-002	TAB	B
		E65508-002	TAB	C
		E65508-002	TAB	DBS
		E67132-T2R5	FUSE LABEL	B
		E67132-T2R5	FUSE LABEL	C
		E67132-T2R5	FUSE LABEL	DBS
		E67764-202	WRAPPING TERMINAL	B
		E67764-202	WRAPPING TERMINAL	C
		E67764-202	WRAPPING TERMINAL	DBS
		E67764-203	WRAPPING TERMINAL	B
		E67764-203	WRAPPING TERMINAL	C
		E67764-203	WRAPPING TERMINAL	DBS
J101		E74008-001	BRACKET	
J102		EMN00TV-405A	4P PIN JACK	
J102		EMN00TV-402A	4P PIN JACK	
J103		EMN00TV-402A	4P PIN JACK	
J104		EMN00TP-404A	4P PIN JACK	
J105		E03623-003	DIN SOCKET	
J109		EMV7112-009	CONNECTOR	
J201		EMV7112-003R	CONNECTOR	
L301		EQL0111-391	INDUCTOR	C
L302		EQL0111-391	INDUCTOR	C
S201		ESP0001-007	TACT SWITCH	
S202		ESP0001-007	TACT SWITCH	
S203		ESP0001-007	TACT SWITCH	
S204		ESP0001-007	TACT SWITCH	
S205		ESP0001-007	TACT SWITCH	
S206		QST4262-E02	PUSH SWITCH	
S207		QST4262-E02	PUSH SWITCH	
S208		QST4102-E08	PUSH SWITCH	
S209		QST4102-E08	PUSH SWITCH	
S210		QST4102-E09	PUSH SWITCH	
FW101		EWR23C-16NN	FLAT WIRE	
FW102		EWR23C-16NN	FLAT WIRE	
FW104		EWR23C-25NN	FLAT WIRE	
FW105		EWR23C-25NN	FLAT WIRE	
FW106		EWR33B-16SST	FLAT WIRE	
FW107		EWR23C-20NN	FLAT WIRE	
FW108		EWR33B-20SST	FLAT WIRE	
FW109		EWR39B-16KST	FLAT WIRE	
FW110		EWR23C-40NN	FLAT WIRE	
FW111		EWR33B-20SST	FLAT WIRE	
FW112		EWR33B-16KST	FLAT WIRE	
FW113		EWR23C-20NN	FLAT WIRE	
FW701		EWR23C-16JN	FLAT WIRE	

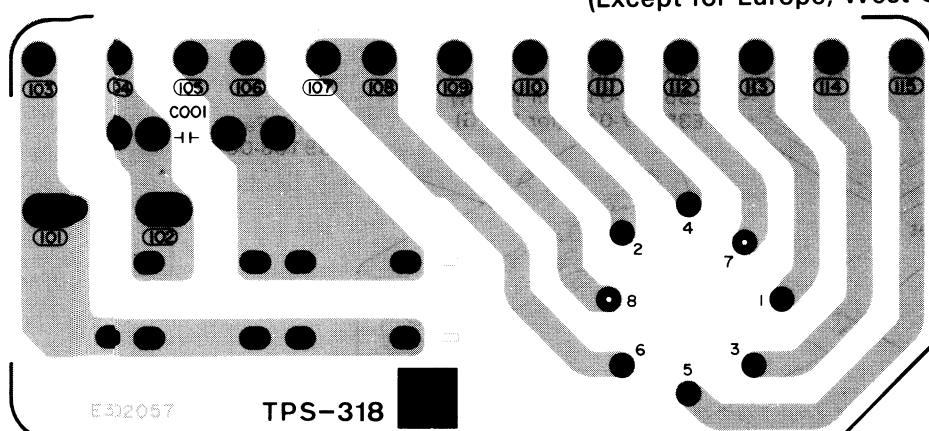
△ : SAFETY PARTS

OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	FW801	EWR33B-16KST	FLAT WIRE	

■ TPS-318A Voltage Selector PC Board

(Except for Europe, West Germany, the U.K. and Australia)



CAPACITORS

△ ITEM	PART NUMBER	DESCRIPTION	AREA
C001	QCZ9018-103	0.01MF CERAMIC	

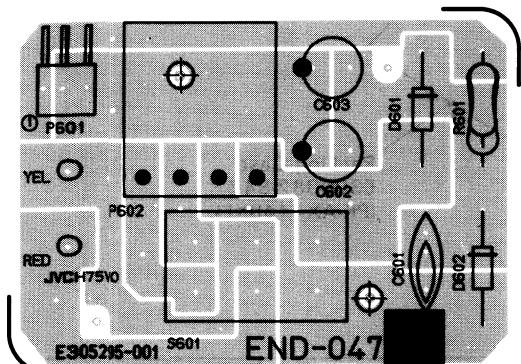
OTHERS

△ ITEM	PART NUMBER	DESCRIPTION	AREA
	E302057-002	PC BOARD	
	E65508-002	TAB	
	E67764-302	WRAPPING TERMINAL	
	E67764-303	WRAPPING TERMINAL	
	E67764-304	WRAPPING TERMINAL	
△	QMC0637-004	AC OUTLET	
△	QSR0085-006U	VOLTAGE SELECTOR	A

△ : SAFETY PARTS

■ END-047A Impedance Selector PC Board

(for Europe, West Germany, the U.K. and Australia)



DIODES

△ ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
D601	10E2FD-1	ZENER	NIHONINTER
D602	10E2FD-1	ZENER	NIHONINTER

CAPACITORS

△ ITEM	PART NUMBER	DESCRIPTION	AREA
C603	QETB1JM-107	100MF 63V ELECTRO	

RESISTORS

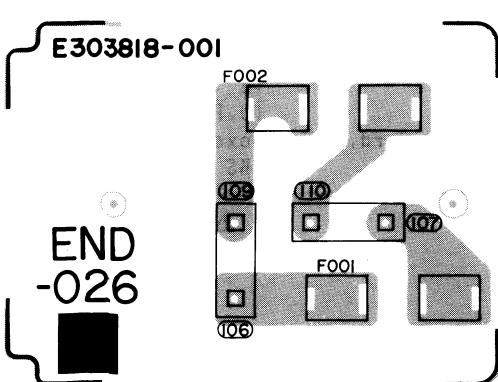
△ ITEM	PART NUMBER	DESCRIPTION	AREA
R601	QRG012J-102A	1K 1W O.M.FILM	

OTHERS

△ ITEM	PART NUMBER	DESCRIPTION	AREA
S601	EMV5102-004B E305295-001 QMV5004-003K QSS5C22-E03	PLUG ASSY PC BOARD PLUG ASSY SLIDE SWITCH	

■ END-026A Power Primary PC Board

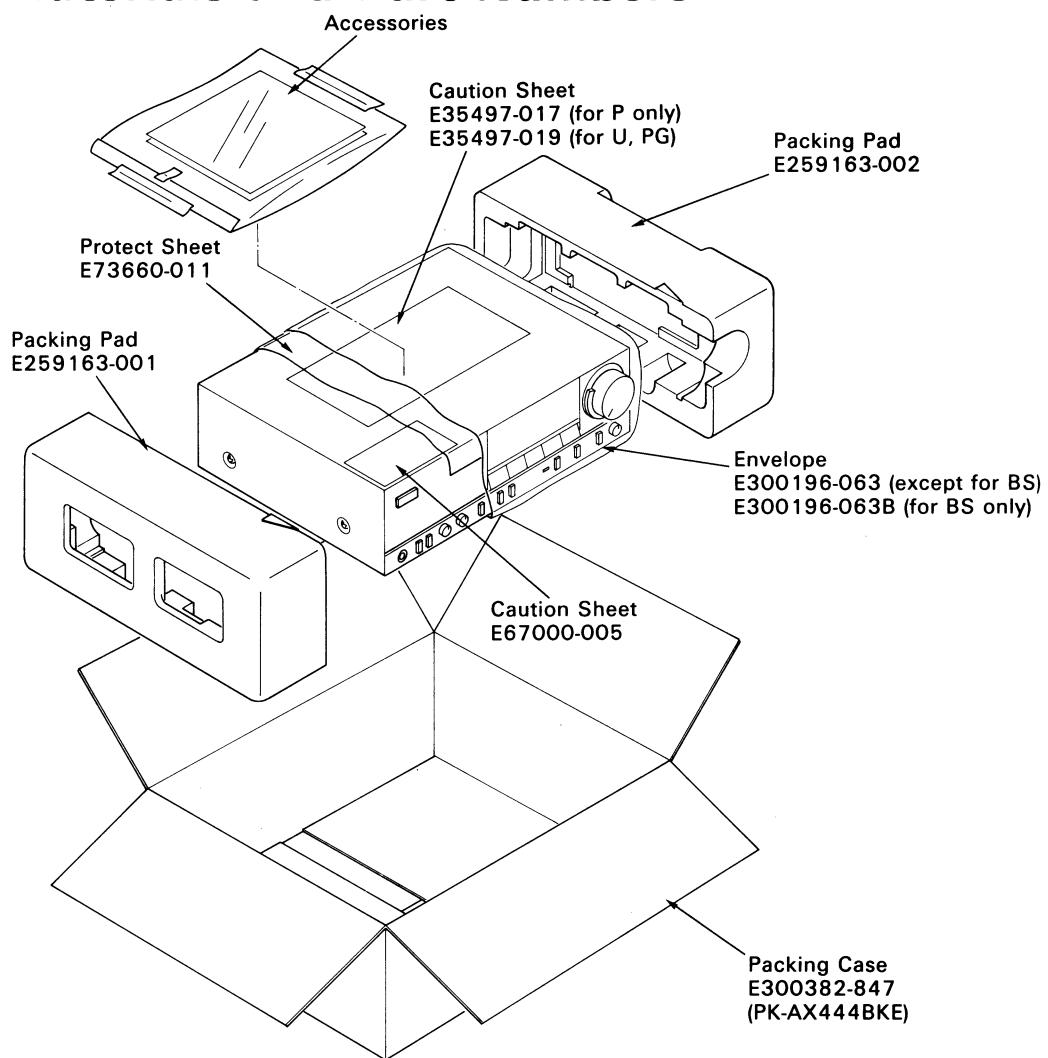
(Except for Europe, West Germany, the U.K. and Australia)



OTHERS

△ ITEM	PART NUMBER	DESCRIPTION	AREA
	EMG7331-001 E303818-001 E67764-202	FUSE CLIP PC BOARD WRAPPING TERMINAL	

Packing Materials and Part Numbers



Accessories List

▲	Parts Number	Parts Name	Description	Areas
	E30580-1432B E30580-1432BBS BT20029C BT20098 BT20064A	Instruction Book Instruction Book Warranty Card Audio Warranty Card Warranty Card		except for BS BS only A A G
	QZL1008-001 BT20060 BT20066 BT20048B BT20046C	Information Sheet Warranty Card EEC Agency Warranty Card Service Information		G BS G, BS P, PG P, PG
▲	E30580-1412A E04056 E41202-2 E41202-2B	Instruction Sheet Siemens Plug Envelope Envelope	for the Inst. Book, W. Card, etc.	E U, PG except for BS BS only

Note: The Marks for Designated Areas

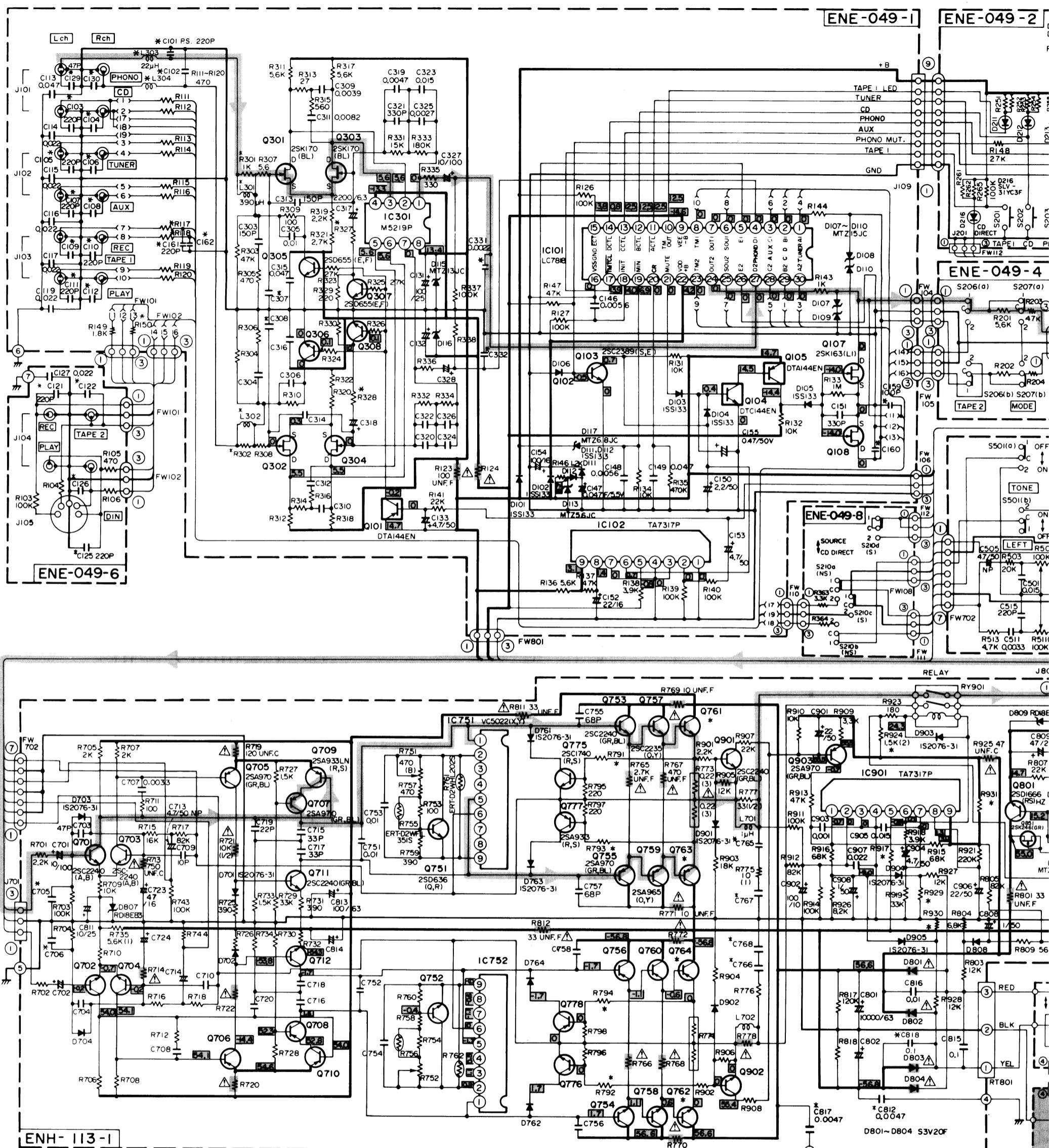
E	Europe	P, PG	U.S. Military Market
A	Australia	UE	Saudi Arabia
G	West Germany	U	Other Countries
BS	U.K.	No Mark indicates all areas.	

▲ : Safety Parts

Schematic Diagram

Notes:

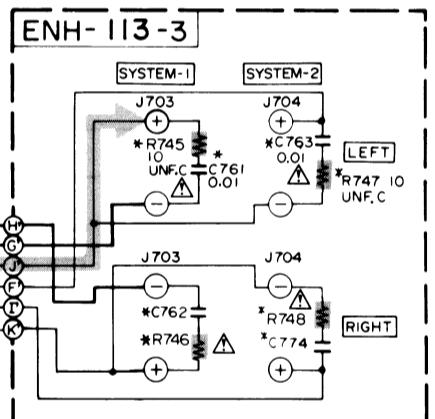
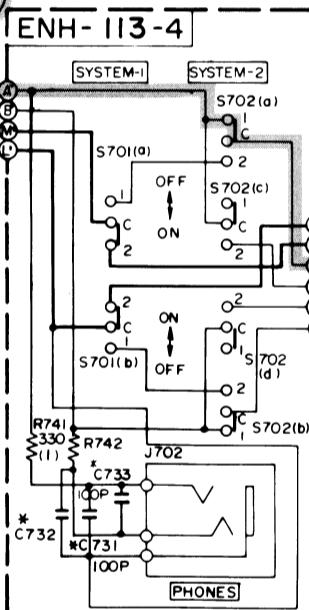
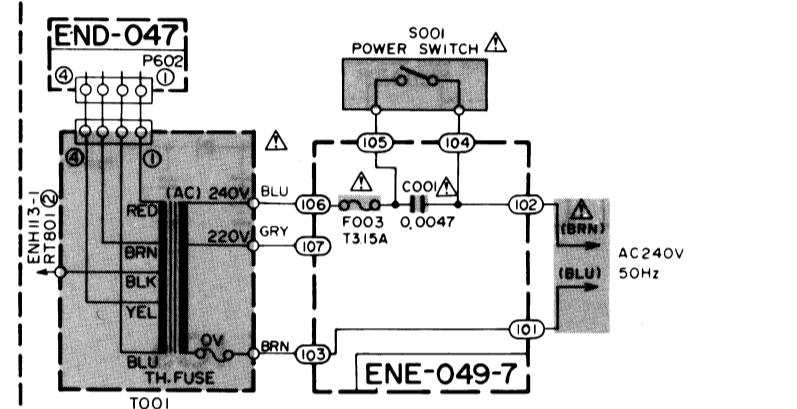
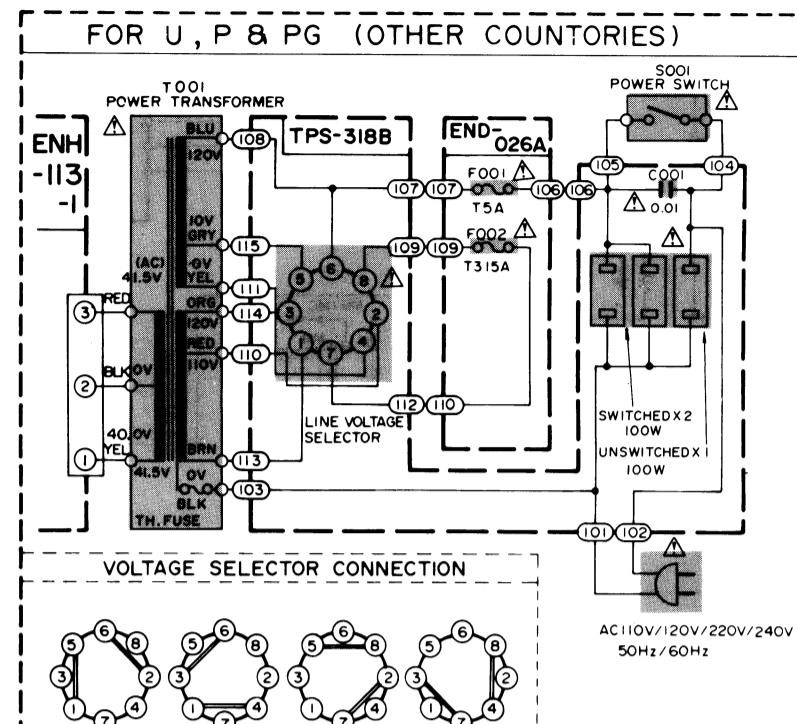
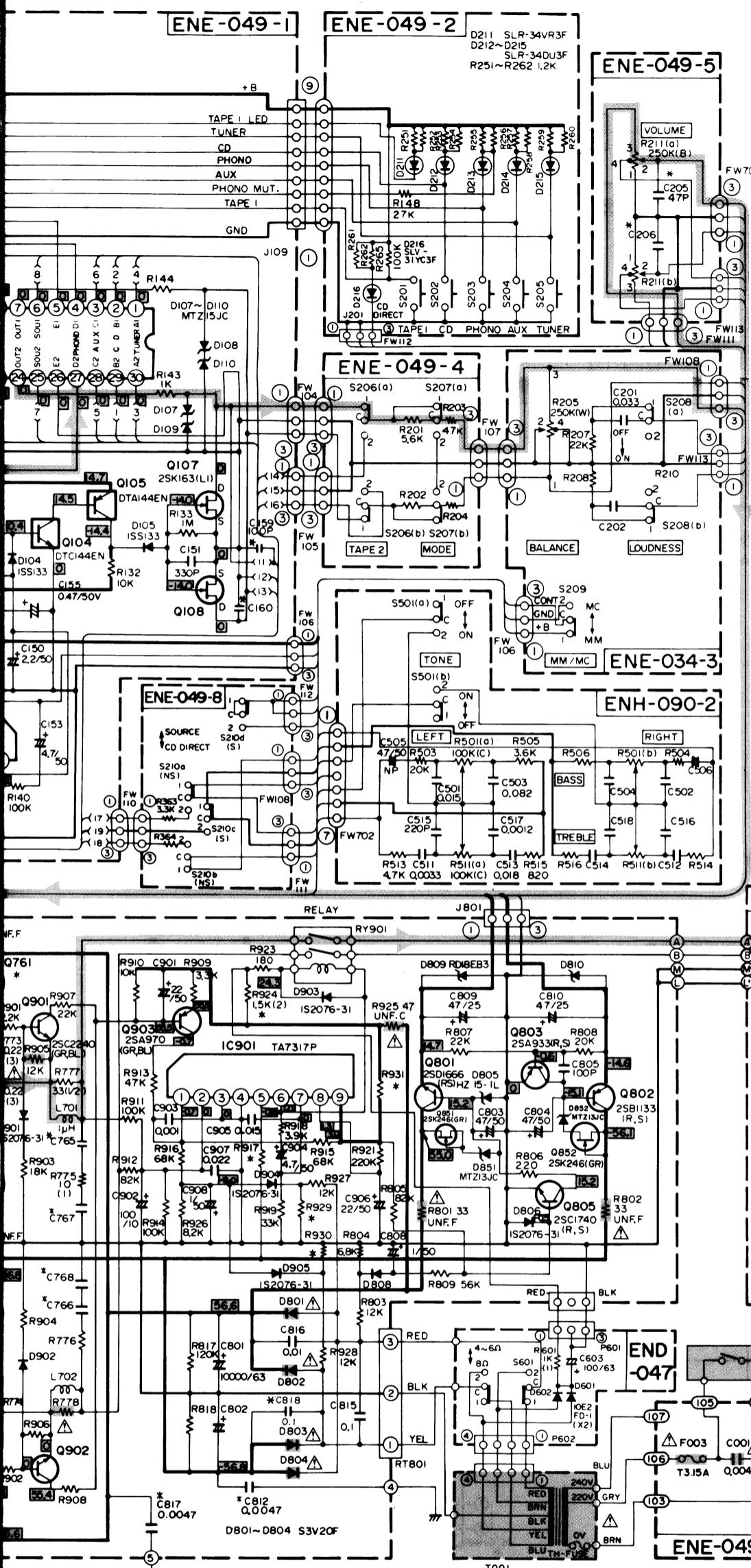
1. shows DC voltage to the ground reference.
2. indicates $\pm B$ power supply.
3. indicates signal path.



Notes:

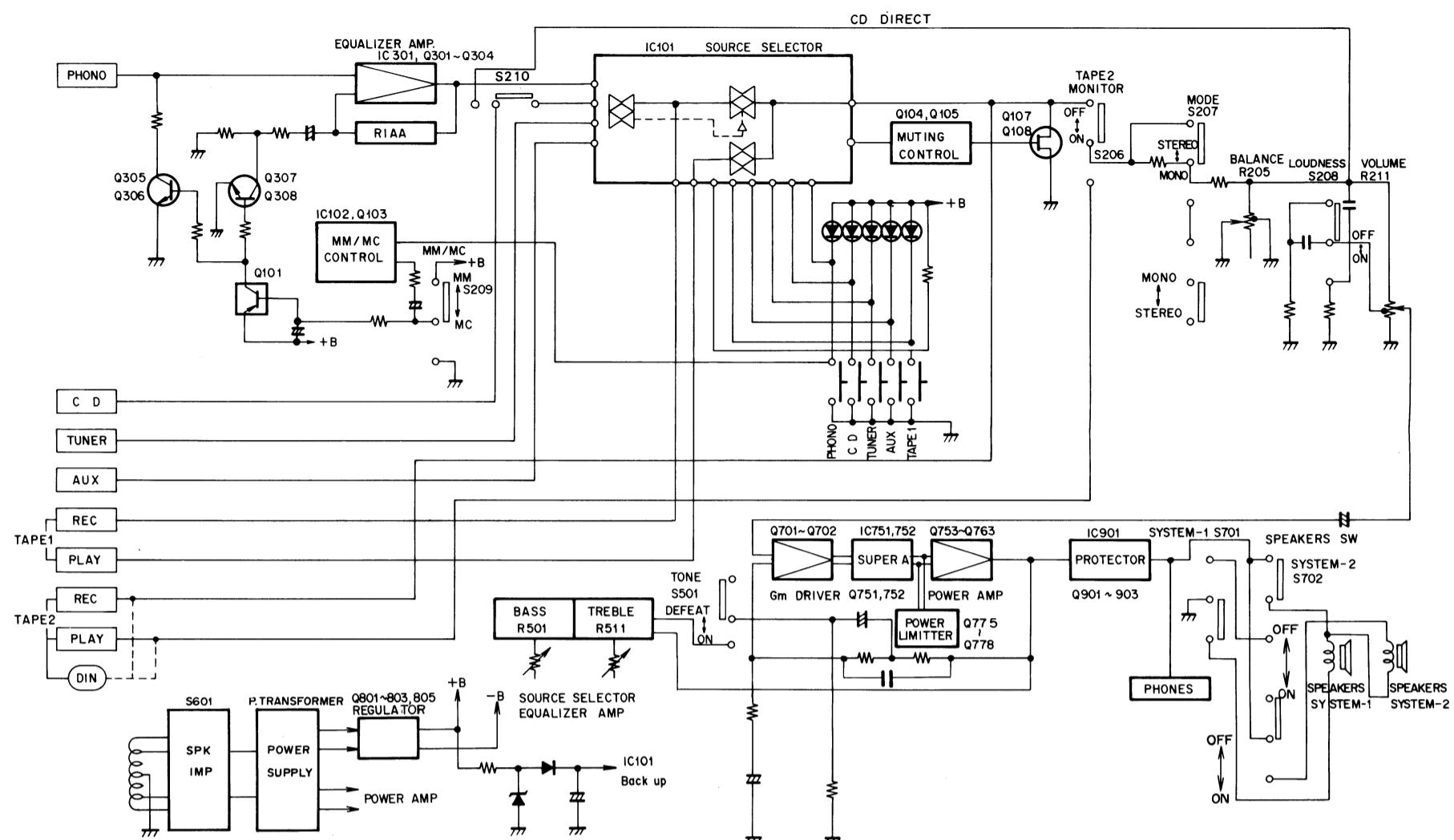
1. shows DC voltage to the chassis with no signal input.
2. indicates \pm B power supply.
3.  indicates signal path.

4. When replacing the parts in the darkened area () and those marked with , be sure to use the designated parts to ensure safety.
5. This is the standard circuit diagram.
The design and contents are subject to change without notice.



COUNTORY SYMBOL NO.	(G) WEST GERMANY	(E , A , BS) EUROPE	(U,UE,P,PG) OTHERS
C101 , C102	USED	NONE	→
C103 ~ C112	USED	NONE	→
C125 , C126	USED	NONE	→
C307 , C308	330P	47P	→
L301 , L302	USED	NONE	→
C731 ~ C733	USED	NONE	→
C761 ~ C764	USED	NONE	→
C765 , C766	O . I	O . I	0 . 047
C767 , C768	O . I	O . I	SHORT
C812 , C817	USED	NONE	→
R745 ~ R748	USED	NONE	→
R301 , R302	USED	SHORT	→
C705 , C706	NONE	100P	→
C205 , C206	USED	NONE	→
R327 , R328	15	18	→
C818	USED	NONE	→
C129 , C130	USED	NONE	→
L303 , L304	USED	NONE	→
R924	NONE	NONE	USED
R917	18K	18K	20K
R929 , R930	8 . 2K	8 . 2K	6 . 8K
R931	27K	27K	30K
R810 , R813	10K	10K	12K
Q761 , Q762	2SD845LB(I,R)	2SD845LB(I,R)	2SD1148LB(I,R)
Q763 , Q764	2SB755LB(I,R)	2SB755LB(I,R)	2SB863LB(I,R)
P701 , P704	170	170	170

Block Diagram

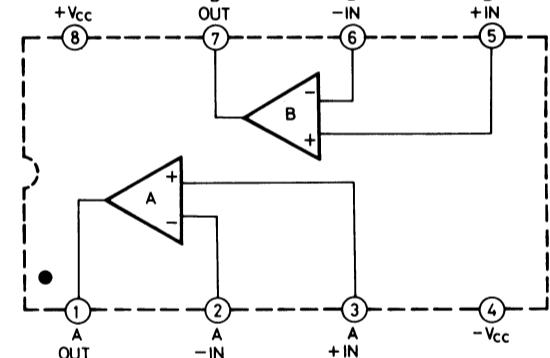
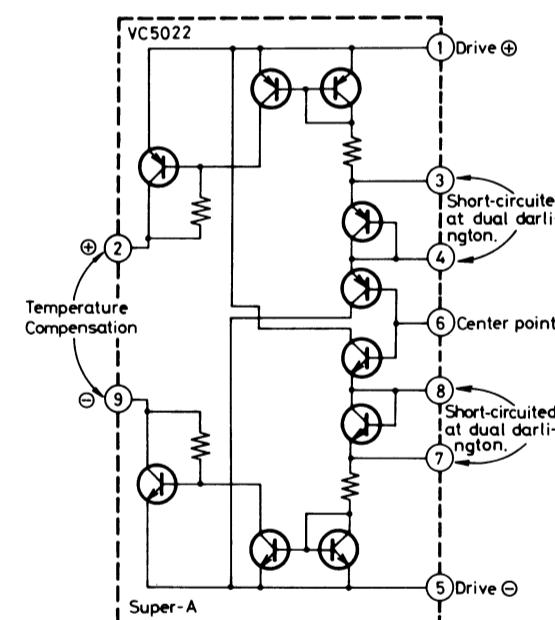
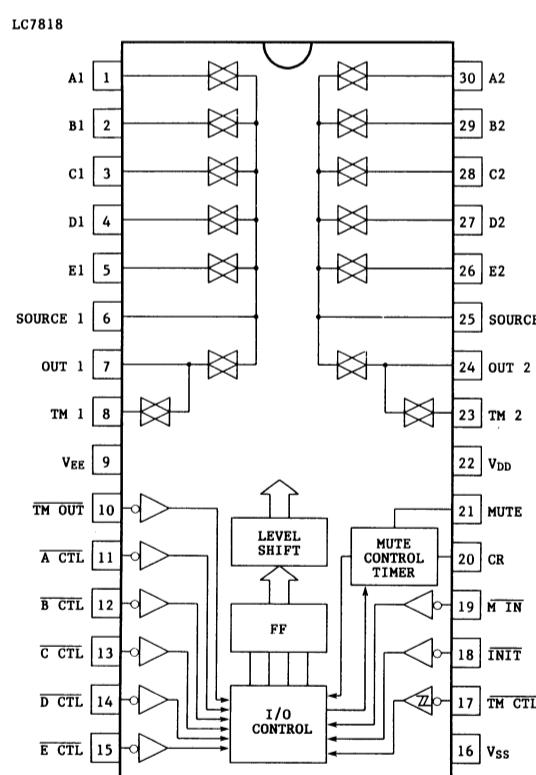


Internal Block Diagram of ICs

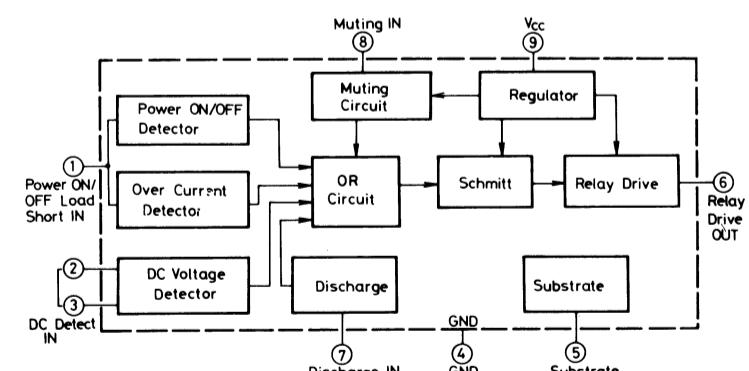
■ LC7818 (IC101)

■ VC5022 [X, Y] (IC751, IC752)

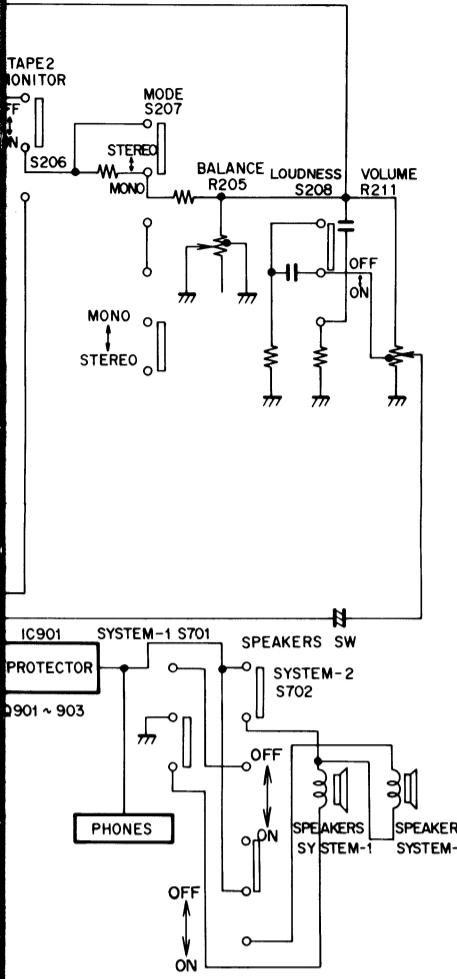
■ M5218P (IC301)



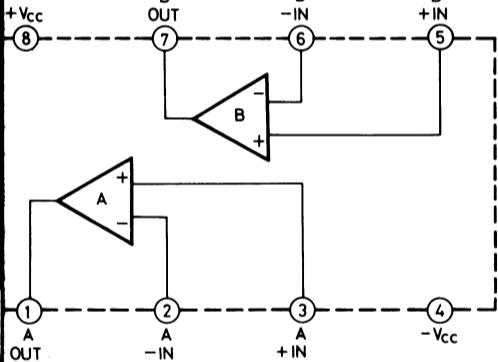
■ TA731P (IC102, IC901)



Connection Diagram



M5218P (IC301)



TA731P (IC102, IC901)

